

Marine Review

Registered U. S. Patent Office

THE BUSINESS OF TRANSPORTATION BY WATER

NEW YORK CLEVELAND LONDON

Published Monthly
Vol. 56, No. 8

AUGUST, 1926

\$3.00 a Year
35c a Copy



The Yellow and Blue Registered Trade Mark appears on all Fitler Pure Manila.

FITLER ROPE

Serves the MALOLO

Again the superior service of Fitler receives recognition in the selection of Fitler Rope and Hawser for the "Malolo". It is appropriate that the largest and finest ship built in American yards should use America's finest cordage.

Since 1817, Fitler Rope has adhered to standards of rope-building that produce the assured safety and utter dependability associated with Fitler Rope in the experience of ship men the world over.

The EDWIN H. FITLER CO. PHILADELPHIA
CORDAGE WORKS
517 Arch Street, Philadelphia, Pa.

Stocks carried at all principal Atlantic, Pacific and Great Lakes Ports

TRADE MARK REGISTERED

Your Guide To this Issue

American Liners

A WELL-BALANCED fleet of American ocean liners of distinction, in size, speed and equipment, under private ownership would be enthusiastically supported.

See Page 15

Shipbuilding

WITHOUT shipbuilding a merchant marine cannot be built up. One is dependent on the other. Shipbuilding should be protected for reasons of national welfare and safety.

See Page 16

Good Operation

THE substantial growth and attendant success of the Dollar line shows what can be done under the American flag by common sense, hard work and determination. The building-up of trade means more cargo.

See Page 17

British Shipping

THOUGH freight rates have gone up, British shipping is in a very difficult position due primarily to the continuation of the coal strike.

See Page 26

Port of Mobile

A CAREFULLY planned ten million dollar terminal development is under way. The port is backed by a vast rich territory which seeks outlet through it. By serving shipping well the city and state will prosper.

See Page 35

General Dalton

IN HIS first public statement after assuming the presidency of the Emergency Fleet Corp., General Dalton hits the nail on the head. Cut the expense of operation by mechanical improvement is his recommendation.

See Page 52



A National Reserve Acetylene System

When you buy dissolved acetylene from Prest-O-Lite you do not depend upon a single plant or a single warehouse. The 31 plants and 85 warehouses of Prest-O-Lite give you 116 sources. They guarantee dependable supply.

THE PREST-O-LITE COMPANY, INC.

Oxy-Acetylene Division

*General Offices: Carbide and Carbon Bldg.,
30 East 42d St., New York*

*In Canada: Prest-O-Lite Co. of Canada, Limited,
Toronto*

*31 Plants—85 Warehouses
22 District Sales Offices*

Prest-O-Lite

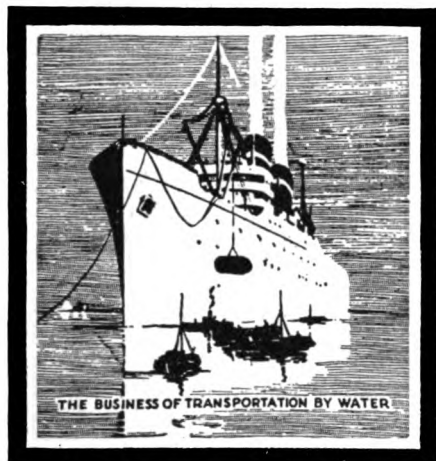
DISSOLVED ACETYLENE

Please mention MARINE REVIEW when writing to Advertisers

Marine Review

*The National Publication Covering the Business of
Transportation by Water*

FOUNDED 1878



Published monthly by
The Penton Publishing Co.,
Cleveland, Ohio, U. S. A.

Cleveland Office, Penton Bldg.

H. Cole Estep, *Vice President*
A. H. Jansson, *Editor*
J. D. Pease, *Advertising Director*
F. V. Cole, *Circulation Manager*
H. O. Taylor
R. C. Coursen

Boston Office, 1037 Old South Bldg.

H. R. Simonds

Chicago Office, 1147 Peoples Gas Bldg.

E. C. Barringer

New York Office, 220 Broadway,

Joseph Fuller, *Eastern Representative*
E. C. Kreutzberg
B. K. Price

Pittsburgh Office, 2148 Oliver Bldg.

S. H. Jasper
W. H. Lloyd

San Francisco Office, 24 California St.

Don Partridge

Washington, D. C. Office,

1653 Pennsylvania Ave.
L. M. Lamm

London Office, 2-3 Caxton House,

Westminster, S. W. 1
Vincent Delpont

Subscription United States and its possessions, \$3 per year; Canada \$4.00; Great Britain and other Foreign Countries, £1:0:0. Single copies 35 cents. Back numbers over three months 50 cents. The Cleveland News Co. supplies the trade with MARINE REVIEW through the regular channels of the American News Co. European Agent, The International News Co., Breams building, Chancery Lane, London, E. C., England.

Member, the Audit Bureau of Circulations, Associated Business Papers, Inc. and the National Publishers Association. Entered at the Post Office at Cleveland, Ohio, as Second Class Matter, under the act of March 3, 1879. Copyright 1926 by The Penton Publishing Co., Cleveland, O.

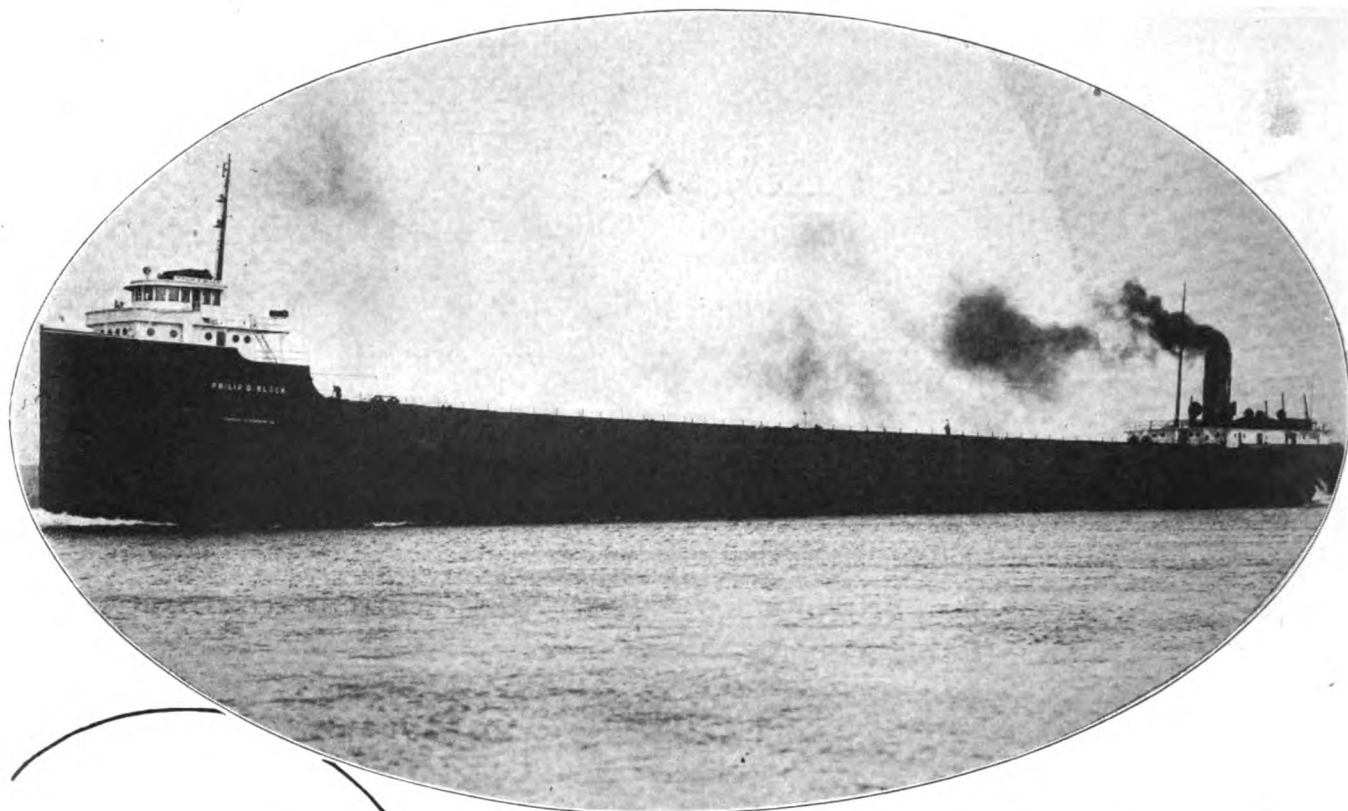
CONTENTS

Vol. 56

August 1926

No. 8

| | Page |
|---|-------|
| Need Capital Merchant Ships..... | 15 |
| Shipbuilding Deserves a Square Deal..... | 16 |
| By J. Harry Mull | |
| Operate American Vessels Successfully..... | 17 |
| Why Section 28 Will Not Help..... | 21 |
| By John H. Frederick | |
| New Type of Diesel Engine..... | 23 |
| By John H. Barnard | |
| British Shipping Gets Setback..... | 26 |
| By Vincent Delpont | |
| Forty-year Old Ship Rebuilt..... | 28 |
| Pennsylvania R. R. Diesel Electric Tug..... | 29 |
| Launch Modern Type Dump Scow..... | 30 |
| Fuel Oil on the Great Lakes..... | 31 |
| By E. C. Barringer | |
| From the Old Log Book..... | 32 |
| Marine News in Pictures..... | 33 |
| Good Lubrication is Essential..... | 34 |
| By T. M. Gunn | |
| Dock Management Progress..... | 35 |
| Mobile Builds Terminal | |
| By David Holt | |
| Channel Steel Dump Scow Completed..... | 48 |
| Dalton Appointed Emergency Fleet Head..... | 52 |
| What the British Are Doing..... | 54 |
| What's Doing Around the Lakes..... | 54 |
| Ocean Freight Rates—Bunker Prices..... | 56 |
| Marine Business Statistics—Ports..... | 58 |
| Maritime Law—Late Decisions..... | 60 |
| By Harry Bowne Skillman | |
| Marine Disasters—Late Flashes..... | 62-64 |
| Trade Publications Reviewed..... | 66 |
| Business News for the Marine Trade..... | 66 |



PHILIP D. BLOCK

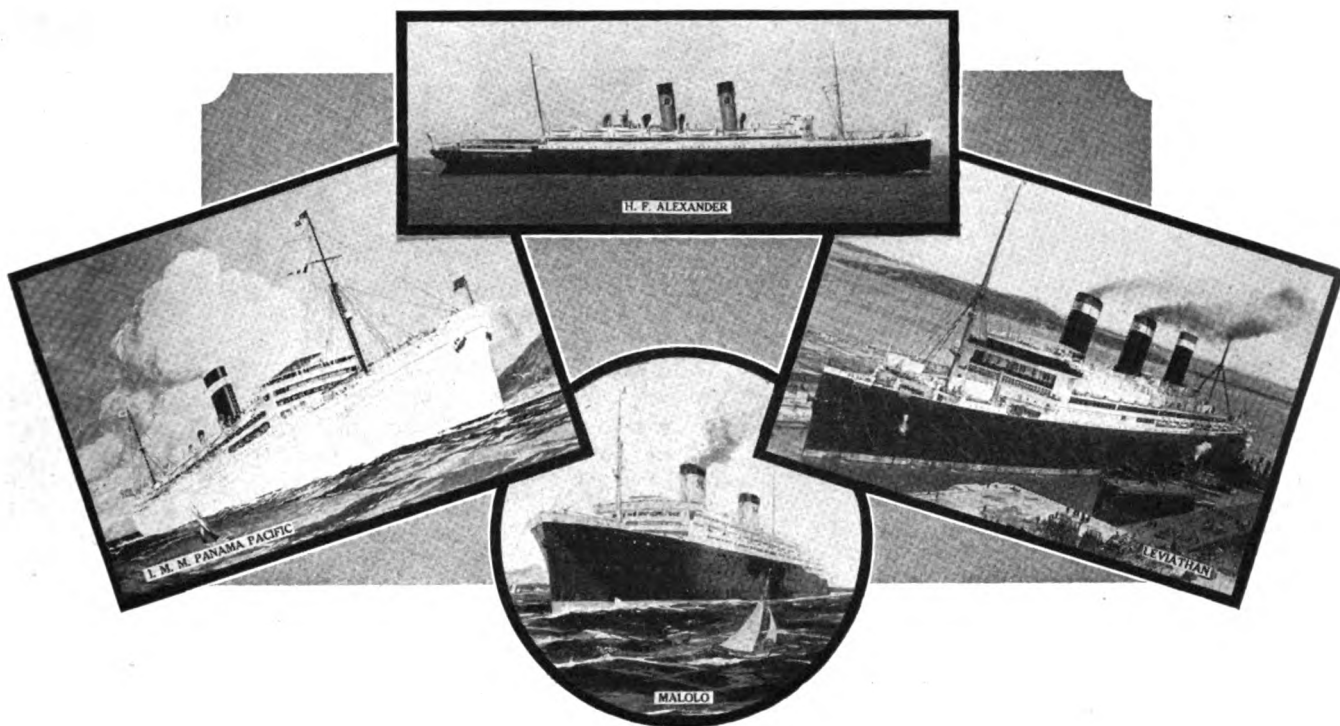
Built by The American Ship Building Company



The American
Com

General Office:
Foot of W. 54th St., Cleveland, Ohio
Construction Plants at:
Lorain Cleveland

Please mention MARINE REVIEW when writing to Advertisers



Need Capital Merchant Ships For Atlantic Service

A TRANSFORMATION is going on in the superficial character and outlook of the American people. National pride is growing and there is less tendency to concede failure in any enterprise. It is becoming the fashion to do things well in an American manner instead of humbly admitting the superiority of foreign ways and aping them. The consciousness of power and wealth which has come to the people of the United States since the war has definitely begun to leave its marked effect in giving them a better appreciation of things American. This tendency is of the utmost importance in the success of a national merchant marine. Excellent service, speed, luxurious accommodations and public rooms appeals to the American and he associates such excellence with American management and will pay well for it. With fine fast ships it is possible to visualize an American management, combining the best of the country's talent succeeding in the trans-

atlantic passenger service. After all, the success of such a service with a superb well balanced fleet would depend upon popular patronage. And we believe that the psychology of the American traveling public is tending strongly to the support of such a fleet. Much has been said about the many disadvantages of operating ships under the flag in the foreign service. It is clear of course that a government backed by the popular will should in so far as legislation can do it remove all obstacles in the way of competition on an equal basis. But if it is agreed that it will become more and more the desire of Americans to travel on their own ships because of better service and to satisfy a growing national pride it is evident that there are also many advantages in operating under the American flag. Let us make it perfectly clear that we have no ambitions to monopolize any trade and that competition of a high order is beneficial to all concerned. We recognize the

Vessel Particulars

The four vessels shown above, two of which are under construction and will not be ready for service until 1927, are the leading ships of the American mercantile marine, in speed, passenger accommodations and size.

Leviathan

Gross tonnage, 59,956; Length overall, 949.75 feet; Beam, 100 feet; Depth to D deck, 70.35 feet; Speed Maximum, 25 knots; Passenger Capacity, 3400; Owners, United States.

H. F. Alexander

Gross tonnage, 8357; Length overall, 524 feet; Beam, 63 feet; Depth, 50.8 feet; Speed Maximum, 25 knots; Passenger Capacity, 583; Owners, Pacific Steamship Co.

Malolo

Gross tonnage, about, 17,200; Length overall, 582 feet; Beam, 83 feet; Depth 54 feet; Speed Maximum, 23 knots, Passenger Capacity, 693; Owners, Matson Navigation Co. American Hawaiian.

I. M. M. Panama-Pacific

Gross tonnage, about, 22,000; Length overall, 601.25 feet; Beam, 80 feet; Depth, 52 feet; Speed Maximum, 20 knots; Passenger Capacity, 722; Owners, International Mercantile Marine Co.

fitness of all nations to participate with their own ships but we expect these nations to respect our natural desire for a fleet of our own. America is a maritime nation and would exhibit a serious national weakness if it calmly gave up the heritage of the seas. It is evident that the national defense would be immeasurably strengthened by an adequate fleet of large and fast ocean liners.

The illustration at the head of this article clearly indicates our present weakness. Measured by first class speed there is only four capital ships in the merchant marine and two of these are 12 years old and the other two are under construction. Only one of these vessels is engaged in trans-Atlantic service. The time is now opportune for a leader of experience, ability, vision and courage to organize the powerful undercurrent of popular desire for a superior American trans-Atlantic service. Under a properly worked out plan backed by men high in public confidence it would not be difficult to finance such an enterprise.

The shipping board has offered for sale the United States lines and the American line, trans-Atlantic passenger and freight services. In spite of the deadly inflexibility and lost motion of government ownership the business done by these lines has been

as good as could be expected under the circumstances. The ships have been popular with the American public.

The United States lines particularly, though the ships individually have given fine service, is entirely unbalanced. For a first class service to give adequate accommodation there should be two additional vessels comparable to the *LEVIATHAN* in speed and completeness of appointments. Besides three ships of the highest class there should be a sufficient number of ships of lesser speed, comfortable and attractive, a type suitable for cruises as conditions might require. The question of economical operation should of course be studied with the greatest care.

With the loss of the services of the *AMERICA* on the eve of going into commission after reconditioning and the delay in proceeding with the contracts to repair her and recondition the *MOUNT VERNON* the United States lines is seriously handicapped due to the inadequacy of its fleet. The reason for the present delay is probably due to the advertised attempt to sell the line. If this line is to give the kind of service which the American traveling public demands it will be necessary to inaugurate an elaborate building program.

The government should act with decision and directness in the sale of this line. The price to be paid should be of minor importance and the character and qualifications of the purchaser should be of major concern. A building program for replacements and additions and guarantees of continued service of high quality should be a part of the contract. Loans for building new ships at a reasonable rate of interest might be made as an inducement. Substantial mail subventions should be awarded for present and future ships. The risk to the purchaser need not be made less than that which a prudent and experienced business man would accept in any enterprise and the rewards which would under these conditions accrue to the purchaser should be willingly and ungrudgingly conceded him.

That is undoubtedly the direct and decisive action which a government like that of Great Britain would adopt under similar circumstances. There is less of a dog in the manager attitude over there and action favorable to the national welfare can be taken with much less criticism and suspicion. The opportunity is here, will the shipping board act with the courage and decision of wisdom or will it play politics and muddle along as it has in the past?

Shipbuilding Deserves a Square Deal

BY J. HARRY MULL

INCREASED working forces in American shipyards, the recent placing of several important awards for new tonnage and the number of contracts now pending are signs that may erroneously be taken as indicating a revival in shipbuilding in this country. When one considers, however, that any two of the larger shipyards could easily handle all of the new construction under way and expected to be contracted for during the remainder of the year, it becomes evident that any real improvement in the industry must await developments of the future. Such developments rests largely with congress and its solution of America's shipping problems.

It is true that for the first time in six years some of the shipyards have taken on additional workers, but it must be remembered that during the same six years the working forces

were depleted by the staggering effects of a depression which showed a decline of more than 97 per cent in the shipbuilding product of the

nation and which only lately took a slight upturn just before reaching the irreducible minimum.

At this time when shipping legislation is undergoing analysis and revision in order that it may meet the requirements of the future, cognizance must be taken of the importance of the shipyards in restoring the American flag to the seas. Adequate shipbuilding facilities are necessary to carry out the expressed purpose of congress, which in the preamble to the merchant marine act of 1920 declares:

"It is necessary for the national defense and for the proper growth of its foreign and domestic commerce that the United States shall have a merchant marine of the best equipped and most suitable types of vessels sufficient to carry the greater portion of its commerce and serve as a naval or military auxiliary in time of war or national emergency * * * and it is hereby declared to be the policy of the United States to do whatever

(Continued on Page 22)

Protect Shipbuilding

Tariff for protection has been the settled policy of the United State since the beginning of its industrial expansion. Under this policy industry has flourished and the nation has grown and prospered. Work has been plentiful wages have been higher than anywhere else and a standard of living unheard of in other countries has been maintained. Why should a vital industry such as shipbuilding which is in direct competition with all the world be permitted to languish due to lack of application of this fundamental policy of our national life? Naval building in former years partly compensated for this lack of protection. But with naval work suspended the shipyards of the nation must be protected if we are to have a merchant marine and desire national security in time of need.

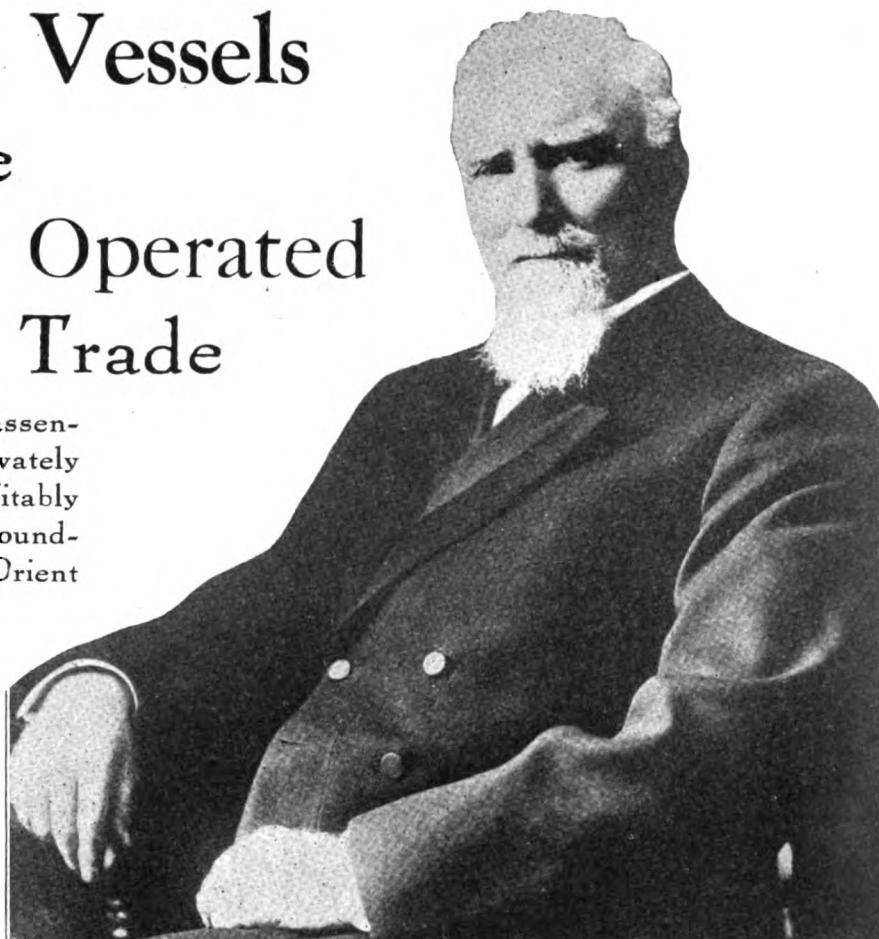
From a statement issued to the members of the Atlantic Coast Shipbuilders association by J. Harry Mull, president of the association and president and general manager of the William Cramp & Sons Ship and Engine Building Co., Philadelphia.

American Vessels Are Successfully Operated in World Trade

Seventeen Government-built Passenger and Freight Ships Now Privately Owned and Operated Are Profitably Engaged in Foreign Trade—Round-the-World and West Coast to Orient Services Steadily Gaining Prestige Through Prompt Reliable Operation and Excellence of Accommodations

I AM a graduate of the university of hard knocks," said Capt. Robert Dollar at a luncheon in his honor at the Whitehall club in New York two years ago. This university long recognized as of supreme excellence in turning out men who are able to cope successfully with the problems of life may well be proud of its illustrious son. The restless energy which has driven him to fame and fortune still stirs him to action. Today at the age of 82 accompanied by Mrs. Dollar he is on his way around the world in order to personally look over the large interests of his company in foreign fields and particularly the Far East.

His native shrewdness coupled with untiring zeal in connection with all his enterprises and the fact that he finds keen pleasure in his work have



Capt. Robert Dollar, Nestor of American shipping, who in his eighty-third year is again circumnavigating the globe on one of the ships of his Round-the-World-Service

helped him to overcome all obstacles even those which it has so often been said makes it impossible to operate American ships profitably in the foreign trade. And he preaches what he practices for he has said with complete sincerity: "There is a big field in the shipping business. Any boy who devotes his time to it can make a success of it despite all the harping to the contrary."

Since September 1923 the Dollar interests under the active management

of his son R. Stanley Dollar has purchased from the United States government and placed in successful operation around the world and across the Pacific 17 passenger and freight ships. These vessels were planned during the war as troop ships and were completed as merchant vessels in 1921 at a total cost of \$93,943,840. For all of these vessels, and in the case of the 10 larger ships including established services, the Dollar company has engaged to pay the United



S. S. PRESIDENT PIERCE OF THE DOLLAR STEAMSHIP LINE'S CALIFORNIA-ORIENT SERVICE—ONE OF THE FIVE 535-FOOT LINERS LISTED IN TABLE 2 PAGE 19

States \$13,975,000 on easy terms. Particulars of these ships and further details in connection with the purchases will be found in the insets Tables 1, 2 and 3 on pages 18 and 19. This is probably one of the ablest transactions in all the history of shipping and before its final consummation was bitterly contested by rival interests who wanted the ships and the services. It was a fair and above board fight and R. Stanley Dollar acting for his company won out.

Extraordinary Financial Success

Some very definite evidence of the success of the Dollar Steamship line was brought out in the hearings before the select committee to inquire into the operations, policies and affairs of the United States shipping board and Emergency Fleet Corp. in the first session of the sixty-eighth congress. Congressman Ewin L. Davis of Tennessee, a member of this committee, indicated the keenest interest in all the details of the transactions leading to the sale in the fall of 1923 of the seven 502-foot passenger and freight ships to the Dollar Steamship line for operation in the round-the-world service. The hearings referred to were held before the consummation of the later sales of the 535-footers. The following facts were brought out on May 14, 1924, quoting from the printed hearings part 2, page 1415:

Mr. Davis—"... In these documents transmitted by that letter of Mr. Talbert, which I have just read,

also appears a consolidated statement of the assets and liabilities of the Dollar Steamship line of California, certified to by J. A. Lognetti, general auditor, under date of Aug. 31, 1923.

"Then another statement of the same company which is headed: 'Consoli-

Mr. Chairman—"I want to ask that both of those statements be inserted as exhibits."

Mr. Cooper—"Very well, they will be inserted as exhibits."

(The papers referred to were marked Exhibits 108-3.)

Mr. Davis—"And there is not much variation between them. There is a slight variation, and I will put them both in, in absolute fairness, but taking the last one, which is represented to be a reappraisal of all assets at market value, it shows that the capital stock of this company is \$940,490, and that the surplus is \$5,604,646.74. In other words, with a capital stock of \$940,490, they have piled up a surplus of over six times their capital stock, in addition to whatever dividends have been paid in the meantime. So that it would appear from that that the guarantee of the Dollar Steamship Co. would be a pretty substantial thing if the contract did not give them a getting-out place."

"I will ask you if it is not a fact, Mr. Philbin, that that is pretty good evidence that ships can be operated by American companies profitably?"

Mr. Philbin—"From that statement I would have to say yes."

Owns Large Fleet

With the sort of business management which made the above statement possible and with very fair ships obtained at a price one quarter or less of what it would cost to build them, success would seem to be assured. This will directly benefit the up-building of an American merchant marine. In time there will be replacements and new ships to take care of expanding trade. American prestige on the Pacific will be greatly enhanced and relations with the Orient will be firmly cemented and will grow.

The fact that the Dollar Steamship line of San Francisco, which today stands as the largest privately owned and operated American steamship company, is serving the world with a fortnightly freight and passenger service and the Orient with two weekly services of like character, one from California and the other from the northwest, plainly shows the handwriting on the wall so far as foreign trade is concerned. In other words, the Orient is one of America's most fertile export fields and the Pacific ocean in time to come, and it will not be very long in coming judging from present indications, will enjoy a commerce equal, if not greater than the Atlantic.

American foreign trade, which was given its first chance to gain a foothold abroad during the war, naturally includes commercial relations with every nation. Due, however, to the fact that many countries in the western hemisphere are themselves strenuously engaged in exporting, the markets of the Far East, where little

TABLE I Dollar Steamship Lines Round the World Service 502-foot President Class

| Name | Cost to build | Sold for |
|--------------------|-----------------|-------------|
| President | | |
| Van Buren | \$ 4,084,695.58 | \$ 550,000 |
| President Hayes | 4,085,573.61 | 550,000 |
| President Polk | 4,086,027.46 | 550,000 |
| President Monroe | 4,085,516.44 | 550,000 |
| President Harrison | 4,085,889.93 | 550,000 |
| President Adams | 4,088,466.49 | 550,000 |
| President Garfield | 4,088,274.71 | 550,000 |
| Total—7 ships | \$28,604,444.22 | \$3,850,000 |

Particulars

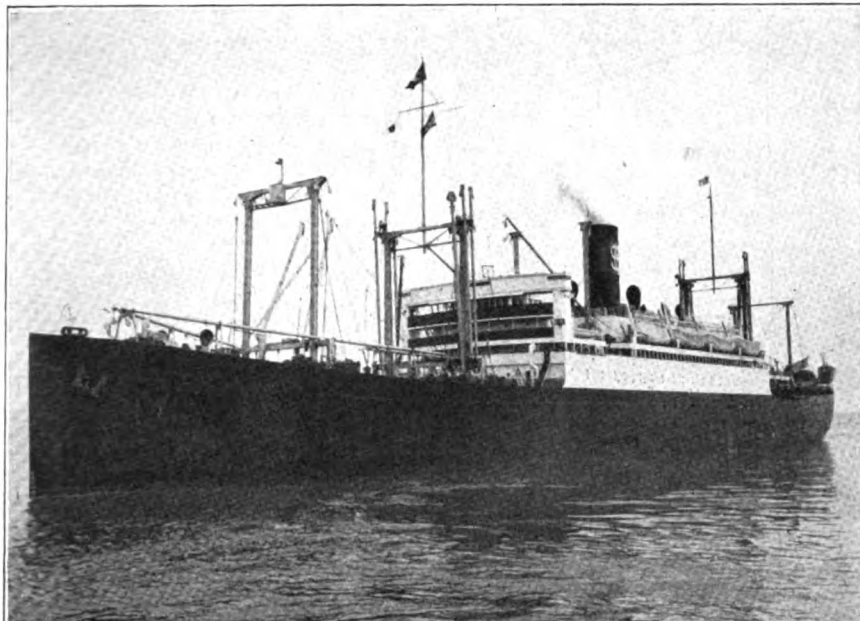
Length overall, 520 feet; length between perpendiculars, 502 feet; beam, 62 feet; depth, 42 feet; draft, 32 feet 3 inches; deadweight tons, 12,375; gross tonnage, 10,533. Machinery—Two 4-cylinder triple expansion reciprocating engines; total indicated horsepower 7000; speed, 14.5 knots; oil burners; average fuel consumption per day 89.6 tons. Boilers—Six of Scotch type. Completed 1921 by New York Shipbuilding Corp., Camden, N. J.

Sold to Dollar Steamship lines for \$550,000 each. Contract signed Sept. 30, 1923. Terms $2\frac{1}{2}$ per cent with bid, 25 per cent two years after delivery, 5 per cent per annum on balance. Interest on deferred payments at 4 per cent per annum payable annually.

dated statement of assets and liabilities of Dollar Steamship line of California and subsidiary companies as of Aug. 31, 1923, after reappraisal of all assets at market value."



MUSIC ROOM ON THE S. S. PRESIDENT LINCOLN, ONE OF THE BEAUTIFULLY APPOINTED PUBLIC ROOMS OF THIS SPLENDID SHIP



S. S. PRESIDENT LINCOLN sailing from San Francisco May 16, 1925 on her first trip in the California-Orient service under the ownership and management of the Dollar Steamship Line—Bound for Honolulu, Yokohama, Kobe, Shanghai, Hong-Kong, Manila and return—R. Stanley Dollar vice president and general manager Dollar Steamship Line

or no domestic manufacturing is done, assume first importance in the activities of the American exporter. America is also closer to Oriental ports in the matter of nautical miles

than any other manufacturing country. The importance of this fact cannot be over estimated because of the old adage, "First come, first served," and America by reason of the weekly sailings from San Francisco and Seattle of Dollar liners for all ports of commercial importance in the Far East finds herself well provided with speedy transport for merchandise.

and sympathetic understanding of the problems of their country. He is often asked to assist in planning important governmental policies and has been the recipient of many decora-

TABLE II Dollar Steamship Lines California-Orient Service 535-foot President Class

| Name | Cost to build | Sold for |
|---------------------|-----------------|-------------|
| President Pierce | \$5,887,111.78 | \$1,125,000 |
| President Wilson | 7,041,551.44 | 1,125,000 |
| President Taft | 7,016,112.64 | 1,125,000 |
| President Lincoln | 7,008,964.80 | 1,125,000 |
| President Cleveland | 6,291,944.92 | 1,125,000 |
| Total—5 Ships | \$33,245,685.58 | \$5,625,000 |

Particulars

Of the above vessels the PRESIDENT CLEVELAND was built at Newport News Shipbuilding & Dry Dock Co., all the others were built at New York Shipbuilding Corp., Camden, N. J. These vessels are 535 feet in length overall; 518 feet between perpendiculars; 72 feet beam; 50 feet deep and 30 feet 7 inches in draft; the deadweight varies between 11,210 and 12,077 tons and the gross tonnage between 14,123 and 14,187. Machinery consists of two sets of geared turbines of 6000 horsepower each driving twin screws; eight water tube boilers burning oil; sea speed, 16 knots, with reserve power, speed 17½ knots. Average fuel consumption 133 tons of oil per 24 hours. Completed during 1921.

Negotiations by the Dollar line for the purchase of these ships were completed in April, 1925. Objection to sale by Pacific Mail delayed consummation. Contract was finally signed for delivery of the ships and service to the Dollar Steamship lines for guaranteed operation between California and the Orient and the first ship the PRESIDENT LINCOLN sailed under the new ownership May 16, 1925. The PRESIDENT WILSON, last ship to be turned over was received July 7, 1925. The total sales price was \$5,625,000 to be paid, in addition to the 2½ per cent that accompanied the bid, one-third by letter of credit payable May 1, 1927 and the balance in 10 years with interest on deferred payments at 4½ per cent per annum, payable annually.

Three Passenger and Freight Services

The Dollar Steamship line now has three fast fleets of freight and passenger lines constantly plying the Pacific. One of these fleets, which consist of seven large passenger and freight vessels, circles the world, providing a fortnightly service to 21 world ports. Another fleet of five splendid passenger and freight vessels confines its activities exclusively to the Pacific, Manila being the terminal port and the third fleet of five similar ships plies the trade route between the Northwest and the Orient. The company also has round the world freight vessels, a Guam service and a number of steamers in the inter-coastal trade between New York and Pacific coast ports.

Capt. Robert Dollar, president of the company bearing his name has been a transpacific shipping man for over 30 years. He was one of the early pioneers in the China trade, which he entered in order to stimulate his lumber export. It is of common report that no American is better versed in Oriental conditions than Captain Dollar. He is looked upon by high government officials in China as a man who possesses an intimate

TABLE III Dollar Steamship Lines Seattle-Orient Service 535-foot President Class

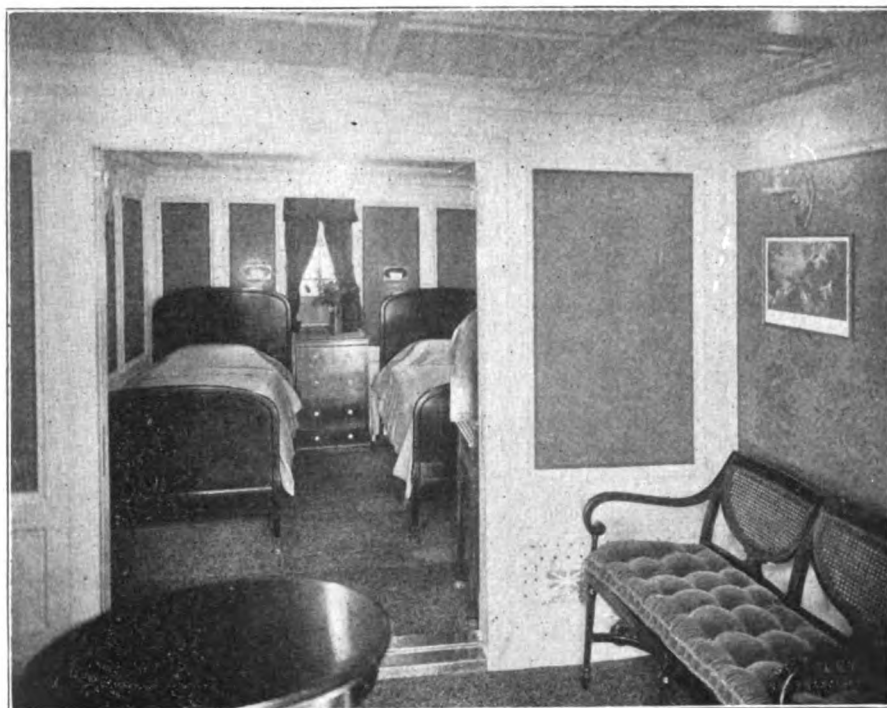
(Admiral Oriental Line)

| Name | Cost to build | Sold for |
|---------------------|-----------------|-------------|
| President Madison | \$5,887,111.75 | \$ 900,000 |
| President McKinley | 7,041,552.23 | 900,000 |
| President Grant | 5,494,496.20 | 900,000 |
| President Jefferson | 7,317,318.15 | 900,000 |
| President Jackson | 6,353,232.06 | 900,000 |
| Total—5 ships | \$32,093,710.39 | \$4,500,000 |

Particulars

The PRESIDENTS GRANT and JACKSON were built, respectively, by the Bethlehem Shipbuilding Corp., Sparrows Point plant, Md., and Newport News Shipbuilding and Dry Dock Co. The three others were built by the New York Shipbuilding Corp., Camden, N. J. They were all either completed or under construction in 1921. These vessels are similar to the President class of ships in the California-Orient service, detailed particulars of which are given in Table II.

The contract for the sale of these five vessels and service from Seattle to the Orient was signed on May 28, 1926. R. Stanley Dollar's first offer was made Feb. 5, 1926 and was for \$600,000 per ship. New bids were asked for and two were received. One from the Dollar interests at \$900,000 per ship and the other for \$800,000 per ship from interests represented by W. B. Keene, a resident of Washington. The Dollar bid was accepted on April 13, 1926. Bitter opposition developed and it was not until favorable decisions by the United States attorney general, the attorney for the shipping board, and the judge before whom the injunction to restrain sale was argued, that the contract was finally signed on May 28, 1926. The terms are not definitely known but it is assumed that they are similar to those for the other fleets purchased.



ONE OF THE DE-LUXE SUITES ON THE S. S. PRESIDENT LINCOLN, COMBINING EXCELLENT TASTE IN DECORATION WITH THE UTMOST COMFORT

tions in appreciation of his services in China's behalf.

The Dollar holdings in China are at the top of American investments in that country. The head office for the conduct of the Far Eastern affairs of the Dollar company is located in Shanghai. Dollar lumber yards are to be found in all the key cities of China, while in the ports, office buildings, docks and other commercial sites are owned.

A Remarkable Career

Captain Dollar began life as a Canadian lumber jack, having emigrated from Falkirk, Scotland at the age of twelve. His early life was one continual struggle which whetted his grit and determination. He went to California in the early eighties and

purchased timber lands and later became a ship owner as a result of his desire to expand his business. In 1901 the ARAB, the first Dollar ship sailed from San Francisco for the Orient. Since then his far-sighted business ability and unflagging vitality have brought him into the front ranks of American shipping men. He was one of the first men to perceive the future greatness of the Pacific and there is not in America a more persistent booster for foreign trade than he.

When he found his interests growing to such an extent so as to include a world service he displayed a typical instance of his far sightedness by turning over the management of his holdings to his son R. Stanley Dollar. Stanley Dollar is a man in

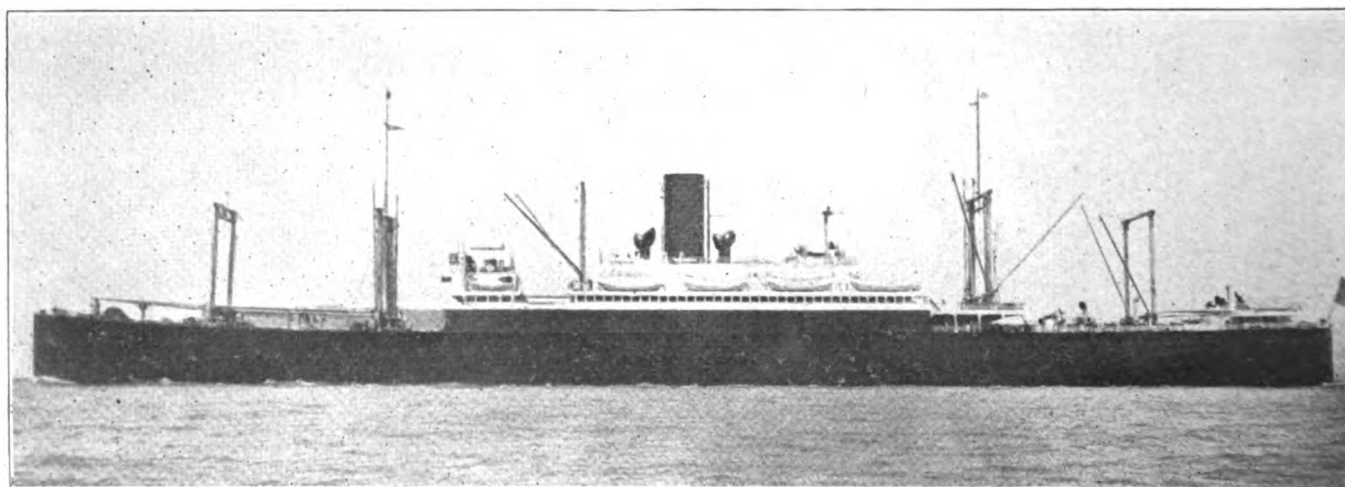
his forties who has been associated with his father in business from the time he completed school.

Some of his outstanding activities, since assuming charge such as the purchase of the seven round-the-world liners from the shipping board in December 1923, the purchase of five additional liners in May 1925 and quite recently the purchase of the five liners and service out of Seattle, would seem to prove that the father had well founded judgment in his son's business ability when he made him manager of the Dollar holdings.

New Services Inaugurated

In January 1924 Stanley Dollar began a world freight and passenger service with the seven liners which constituted his initial purchase from the government. The successful operation of these boats caused the shipping board to ask him to bid for five transpacific liners which the government was desirous of selling to a company which would operate them to the betterment of the American merchant marine. Dollar complied with the board's request and his bid was accepted. These vessels are now being successfully operated out of San Francisco. With the recent purchase from the shipping board of the five liners of the Admiral Oriental line from Seattle to the Far East a very complete service is now being maintained between all of America and the Orient. These three deals have placed Stanley Dollar in the front rank of American ship owners and it is interesting to note that both he and his company are products of the West of America. The capital behind the Dollar Steamship line was also drawn from the same locality. San Francisco has long been the clearing house for Oriental imports and exports and consequently the growth

(Continued on Page 46)



AN EXCELLENT BROADSIDE VIEW OF THE S. S. PRESIDENT LINCOLN OF THE DOLLAR STEAMSHIP LINE'S CALIFORNIA-ORIENT SERVICE. SEE TABLE 2 FOR PARTICULARS

Why Section 28 Will Not Help

Congestion at Larger Ports Without Rail Preferential—Restriction of Carrying Facilities—Probably a Rate War Against American Ships

BY JOHN H. FREDERICK

SECTION 28 of the merchant Marine act of June 5, 1920 provides that special export and import railroad rates shall be granted only in case the traffic moving into or out of the country is in vessels documented under the laws of the United States. It is further provided, however, that if the United States shipping board is of the opinion that adequate steamship facilities do not exist at any port, it shall certify such fact to the interstate commerce commission, which shall suspend the operation of section 28 "for such length of time and under such terms and conditions as it may prescribe." "Such suspension may be terminated by order of the interstate commerce commission whenever the shipping board is of the opinion that adequate shipping facilities by such vessels to such ports are afforded and shall so certify to the interstate commerce commission."

The special export and import rates referred to in this section are those already in effect on our railroads. It should be noted that this section can not go into effect until the United States shipping board has certified to the interstate commerce commission that adequate shipping facilities exist.

Enforcement Often Postponed

The shipping board on June 9, 1920 certified to the interstate commerce commission that the facilities contemplated by congress were not available and requested the suspension of section 28 for ninety days. This period was later extended to Jan. 1, 1921. The shipping board then requested a further extension and the interstate commerce commission suspended operation of the section until further notice. Then on March 1, 1924, the commission received a resolution from the shipping board which it had adopted on Feb. 27, 1924, certifying that adequate shipping facilities were then available to handle the transportation of all commodities other than grain between the ports of the United States and ports of Great Britain and northern Ireland and the Irish Free State, and ports of

This study of the possible effects of the enforcement of section 28 was prepared in answer to a recent editorial in *MARINE REVIEW* suggesting that it be applied. The author is instructor in commerce and transportation at the Wharton school of Finance and Commerce, University of Pennsylvania, Philadelphia.

continental Europe north of and including Bordeaux and the East Coast of Asia, the islands of the Pacific ocean, Australia and the East India islands and the ports of Central America.

The interstate commerce commission construed section 28 as requiring it to lift the suspension of said section in accordance with this certification of the shipping board and accordingly issued an order on March 11,

An Economist's View

There is undoubtedly a successful solution for every problem no matter how difficult, including finding ways and means for increasing the American merchant marine in the foreign carrying trade. Since traditionally the United States has protected its industries against ruinous foreign competition by tariff it would seem only fair to protect American standards of living on the high seas, in trade to and from the United States at least, in some manner. Such was the intent of section 28. But would its enforcement do more harm than good? The answer to this question should be based on a cool analysis of all the economic factors involved.

Mr. Frederick, a student of commerce and transportation, comes to the conclusion that its enforcement would not help the merchant marine and that it would restrict the facilities for free movement of trade.

1924 which gave notice to the railroad carriers to amend their tariffs accordingly by May 20, 1924. The railroads protested that this did not give them sufficient time to make the required changes so the commission postponed the operation of section 28 until June 20, 1924. Before this date arrived, however, the United States shipping board withdrew its certification and the interstate commerce commission again suspended section 28 until further notice.

As Aid of Merchant Marine

It might be noted at this time that section 28 was not a part of the

merchant marine act of 1920 when it left the house but was inserted in the senate. Its primary purpose is of course to aid the merchant marine of the United States. It tries to cure the situation whereby the import and export rates on the railroads of this country were discriminating in favor of the foreign shipping lines—the greater proportion of our exports being carried on foreign ships. If there were to be any preferential rates it was felt that American ships should get the benefit. It was thought that the operation of this section would be a big incentive for American exporters to use American ships since so often on both exports and imports there is a long haul by rail in this country. In fact we are the only country of any commercial importance where the rail haul is so important. Germany has used this same scheme but her rail haul is nothing in comparison to ours.

Let us now consider some of the reasons why section 28 has not been enforced and why it would not be in the public interest to enforce it even though the United States shipping board should, at some future time certify that adequate tonnage existed.

Congestion in Larger Ports

The first of these reasons is that enforcement of section 28 would cause congestion of traffic at ports where there are practically no rail differentials on import and export traffic. With but few exceptions the export and import traffic shipped through New York, Philadelphia or Baltimore is carried at the regular domestic railroad rates. These ports are fundamental in the export and import rate structures of the railroads which need not be entered into here. It would, therefore, make little difference to the exporter or importer whether his shipment was carried on an American or foreign vessel provided it was handled through one of these basic North Atlantic ports. It can readily be seen that foreign vessels would congregate at these ports and provide tonnage to carry almost any amount.

The other ports, however, are granted special rates based on the rates to and from the North Atlantic ports. The exporter or importer in shipping through these other ports

would lose money unless American ships performed the ocean haul. Foreign lines, because of the discrimination at these ports, would be engaged in the North Atlantic trade from New York, Philadelphia or Baltimore where they would be on a parity with American ships or would be at the least disadvantage. It is hardly possible that sufficient American vessels would gather at ports outside of New York, Philadelphia and Baltimore to carry all the traffic there obtainable. The result would be to cause exporters to route some of their shipments which might now possibly use Gulf ports, for example, to the North Atlantic ports, where they would lose nothing on the railroad rates. This would divert traffic to the basic ports and deprive other ports of some of the business which they now secure.

The ultimate effect of section 28 and its enforcement might be merely to divert traffic from certain ports to others with little or no gain in tonnage for American vessels.

Restriction in Carrying Facilities

The second reason for the non-enforcement of the section is because, in effect, the facilities for carrying American and foreign commerce on the ocean would thus be greatly restricted. Available tonnage would probably be most limited at Gulf and Pacific coast ports, to and from which existing import and export rail rates most largely apply. Charter tonnage or "tramp tonnage" is limited under the United States flag and the enforcement of section 28 would operate against the making of future contracts for the transportation of bulk cargoes of coal and other commodities and thus hamper the export of American commodities in ship-load quantities as an exporter would not be able to know whether he could get an American ship or not, at the time shipment was to be made.

It might here be mentioned that the enforcement of the section would greatly complicate things for the railroads as well as for the shippers from interior points because agents at these points will not know whether goods for export are to be moved in American or foreign bottoms. Great opportunity is here offered for errors in computing rail charges and there would be a need for an increase in the number of accounting office employees handling correction notices and overcharge claims.

A shipper would be penalized by having to pay the higher domestic freight rate if he shipped through a port where no American vessels were available and he was therefore

forced to use a foreign ship. Of course, shippers at all ports—that is those who had no rail haul involved in their shipment—could export and import in foreign bottoms with no penalty at all so far as section 28 is concerned. The inland exporter and importers are the only ones affected.

The third reason for not enforcing section 28 has been the fear of retaliation on the part of those foreign countries which might feel the discrimination caused by such enforcement. This fear is perhaps exaggerated and without grounds but certainly those nations which are extensively engaged in the carrying trade might take such steps. It is entirely possible that some form of retaliation might arise which would offset all the advantage which the American merchant marine might gain. If, however, foreign vessels enter into those trades in which they would be on an equal footing with the American vessels, there would probably be no occasion for retaliation. The congestion of traffic at the basic North Atlantic ports would give the foreign lines sufficient business to enable them to stay at these ports.

An Unequal Rate War

In this connection there is always the possibility of a rate war. It is doubtful if the advantage in railroad rates which American ships would gain under section 28 would be sufficient to offset the possible disadvantages which they might face in ocean rates. It is a well known fact that American vessels can not be operated at as low a cost as can foreign ships. Ocean rates are maintained at the same level by nearly all lines through conference agreements but if foreign ships were discriminated against in the matter of railroad rates, it is quite possible that a revision of steamship rates would be made which would offset this disadvantage. It is even possible that rate wars might be resorted to which would cause foreign vessels to cut their rates far enough below the level of charges maintained on American ships to attract a share of the business. In either case, the combined rail-and-ocean rate from the interior point in the United States to a foreign destination and vice-versa, in the opposite direction, may be the same whether the traffic is handled by an American or a foreign vessel. In the event of rate wars it is even possible that the through rate, when shipment was made on a foreign vessel, would be even lower than the rates on American ships.

There would then be no reason for American foreign traders to ship on vessels of the United States because it would involve no saving to them. The intent of section 28 is to encourage the use of American ships by means of the lower through rates which may be obtained when they carry the shipment in the ocean haul but the actual effect of its enforcement might be to eliminate this attraction and in some cases to cause lower rates on through traffic handled by foreign vessels.

Protect Shipbuilding

(Continued from Page 16)

may be necessary to develop and encourage the maintenance of such a merchant marine."

Three major reasons may be cited why the shipbuilding industry cannot maintain itself on the business at present available:

1. Curtailment of construction in private yards for the United States navy as a result of the armament treaty, the effect of which is obvious considering the fact that 60 per cent of the prewar production of the shipyards was taken by the navy department.

2. Curtailment of building for coastwise trade due to the surplus of shipping board tonnage.

3. Inability to relace shrinkage of tonnage referred to because of higher costs of constructing ships in this country than abroad. This condition has resulted in certain American concerns contracting with foreign yards for the construction of 26 vessels during the past few years for use in foreign trade aggregating approximately \$50,000,000 worth of work, which could just as well have been done in American yards and would if there was anything like an equivalent basis.

To make it possible for ships to be built in American yards for use in foreign trade at an equivalent basis with the ships with which they necessarily compete, and to insure the replacement of vessels now being used, the following principles may be laid down upon which suitable legislation should be based:

1. That an American-built ship for use in the foreign trade, is, of its essence, an export commodity and entitled to the protective policy applied to its necessities as long as protection is the accepted policy of this nation. It has no market in domestic trade unlike other commodities.

2. That an American-built ship in international trade is living its life essentially outside American territory

(Continued on Page 28)

Increased Power—Less Weight

Experimental Tests of Constant Pressure Cycle in Small Engines—
Resembles Steam in Action—Severe Internal Stresses Eliminated

BY JOHN H. BARNARD

ALL history is bunk—to the extent that it is disregarded. Therefore, to the extent that the lessons taught by history are neglected we are all losers.

In the history of the internal combustion engine there is a valuable lesson taught in the accomplishments of George B. Brayton by which the world at large has failed to profit and, through disregard of which, his native country has lost the place it would have retained in this field had a modicum of the development put into foreign engines been employed in this American's pioneer cycle.

In brief review of the recognized heat cycles, it may be said that, in accordance with the complementary laws of gases formulated by Boyles and by Charles, we have, interrelated, the elements of pressure, temperature and volume.

In advance of all types of heat engines, and, even before the world was sufficiently advanced in the mechanical arts to have produced an engine, Carnot announced, as a mathematical conception, the possibility of producing work from heat by a cycle wherein the development was accomplished through variations of pressure and volume while the temperature remained constant.

Following the early developments of the steam engine came a series of attempts to produce engines operating on gaseous fuels of which some resembled the Newcomen steam engine in that the piston was raised by an explosive charge and when this had been released the piston was forced back by atmospheric pressure, but none of them are of material moment in a hurried sketch until, in 1873, Brayton produced, commercially, in Philadelphia, his nonexplosive oil engine, on a cycle devised by him, in which the conversion of heat into power is accomplished during variations of temperature and volume while the pressure remains constant.

These engines he continued to build, and sell, during the three following years and one figured strikingly at the Centennial Exposition in Philadelphia in 1876. Others were built in England, as gas engines, by the Messrs. Simon of Nottingham and, further, it is well worthy of note that Holland's first power driven

submarine was propelled by a Brayton engine.

In 1876 Doctor Otto brought out his "silent" engine, using still a third cycle, wherein the power development is realized while the pressure and temperature vary and the volume is constant or, in other words, during so short a period as to amount to an explosive effect.

Following these pioneers came the physicists who have very thoroughly determined the theoretical efficiencies of each and all the developed cycles and have pointed out the requisites of engines suitable to each of them. In consequence, the designer knows in advance the possibilities from which the mechanical losses are to be subtracted in meeting a purchaser's desiderata in weight, cost and operative characteristics.

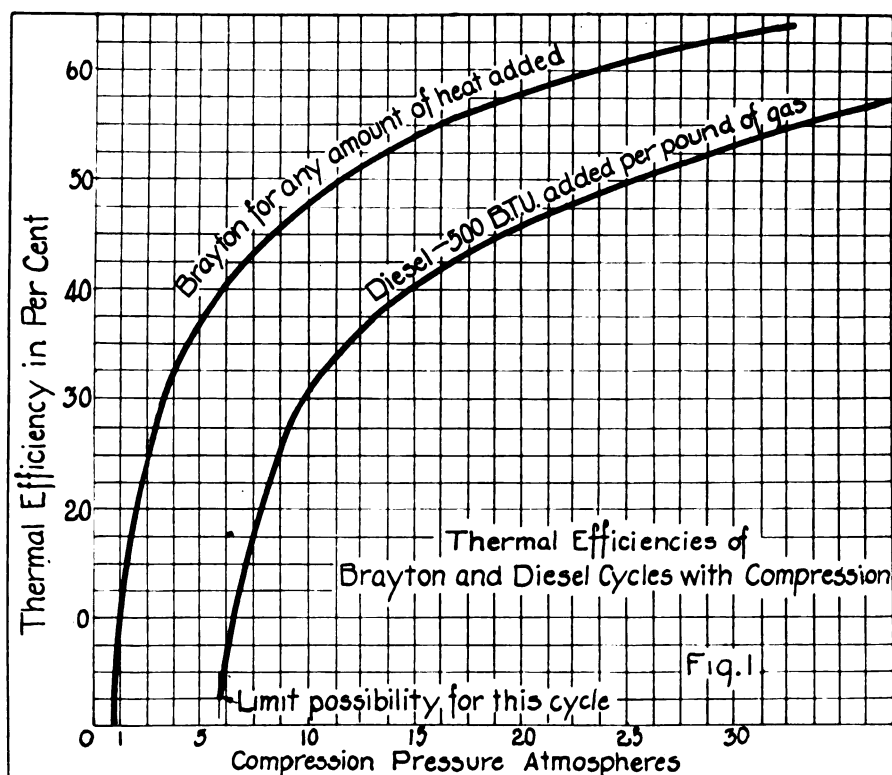
From the unanimity of these thermodynamic analyses it is clear that the possible efficiency of the "Carnot," or constant temperature cycle, is far and away superior to both the "Brayton," or constant pressure cycle, and the "Otto," or constant volume cycle, and that the constant pressure cycle is so much superior to the constant volume cycle that it easily ranks first

of the practical cycles; because, the constant temperature cycle demands so high an initial pressure to afford a reasonable mean pressure that the weight and cost of a Carnot engine would be entirely prohibitive.

With these thermal characteristics of the several heat cycles established, there is reached the physical characteristics of the constant pressure and the constant volume cycles and the consequent fields of adaptation.

Where gaseous fuels, such as blast furnace gases, are readily obtainable or where volatile fuels, such as gasoline, can be afforded the relatively low efficiency of the constant volume cycle is more than offset by other considerations; but, where large units must be operated upon other fuels the superior thermal possibilities of the constant pressure cycle are of first account and there comes now a consideration of the several types of engines working on this cycle.

The most developed of these are the diesel engines with which other constant pressure engines must be compared for the reason that foreign backing, in untold sums, has been behind this type while little money and less experimentation has been spent on the



Brayton engine.

Between these two, the essential difference lies in the fact that in the diesel type the full capacity of the power cylinder of air is compressed to some 30 odd atmospheres and, into this air, so heated, there is injected, during a short period near top center, a desired quantity of finely divided fuel. During this short period of injection the initial pressure is sustained and thereafter it falls off, as the piston advances, to one of about 40 pounds at release. In the Brayton cycle, however, this work of compressing the air of combustion is done in other cylinders (as is scavenging air for two stroke diesel engines) into a receiving tank and only an amount proportional to the load is compressed. From this

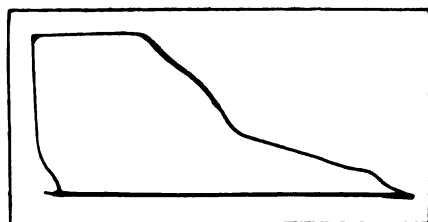


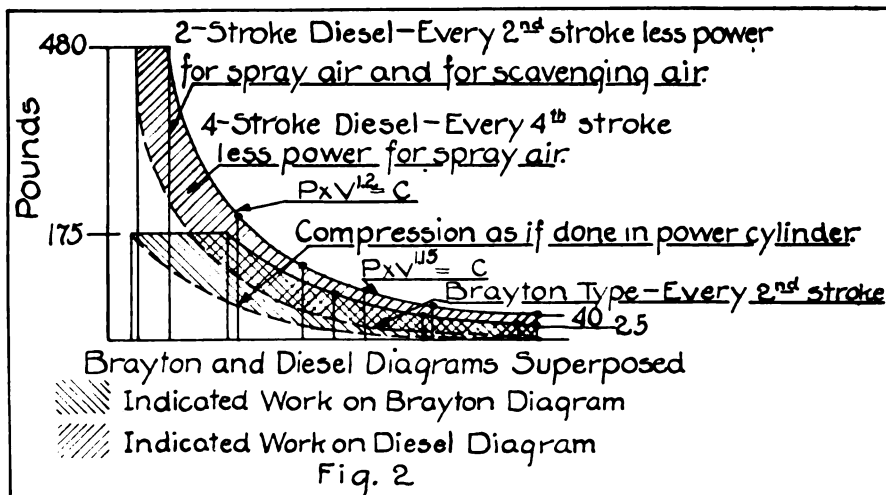
FIG. 3—INDICATOR CARD MADE BY 15 CONSECUTIVE STROKES OF EXPERIMENTAL ENGINE

receiver the air is admitted into the power cylinders as steam is admitted into the cylinders of a steam engine or air is admitted into the cylinders of an air motor during fractions of the power stroke which are varied in accordance with the momentary load. And, as it is admitted, it is sprayed with the pulverized fuel at a rate which affords a continuously uniform richness of mixture and, in the cylinder, it burns quietly with no form of explosion but at constant pressure and at substantially constant temperature for almost any period of follow. In consequence, the working characteristics of this type are entirely comparable with a reciprocating steam engine or those of an air motor except it only requires about a fourth of the volume of air that would be required by an air motor because, in this engine, the volume supplied is multi-

plied some four times by its elevation in temperature due to the burning of the fuel with which it is mixed.

These differences between these two types bring in their wake a number of differences in performance of which all are of high value and all are in favor of the Brayton type.

The one on which most depends is



shown in Fig. 1, wherefrom it is to be seen that the theoretical efficiency of the Brayton cycle at 15.7 atmospheres is equal to that of the diesel at 32.2 atmospheres, even when the mixture used with the Brayton be rich or lean and where the ratio of fuel to air in the diesel is at its best.

In both these curves it is presumed that expansion is carried through to atmospheric pressure which, of course, is never worth while, but, reference to Fig. 2 will show that the closer approximation thereto suits well the Brayton cycle where the release pres-

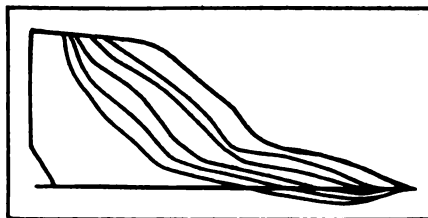


FIG. 4—INDICATOR CARD SHOWING A NUMBER OF CONSECUTIVE STROKES ON EACH OF A NUMBER OF LENGTHS OF FOLLOW, EXHIBITING THE FEATURE OF VARIABLE CUT-OFF TO SUIT VARIABLE LOADS OR SPEEDS. SPRING 1" = 60 LBS.

sure is but 25 pounds whereas 40 pounds or more, is usual in diesels. And, while discussing Fig. 1 it is to be particularly noted that the Brayton efficiency is independent of richness of mixture while the thermal stresses in cylinder and head are quite

TABLE I

| Type | M. E. P. | Vert. Stress | Piston speed |
|----------------------------------|----------|--------------|--------------|
| 4-stroke diesels, air injection, | 90 lbs. | 249,780 lbs. | 637 ft. |
| 2-stroke diesels, air injection, | 85 lbs. | 162,380 lbs. | 495 ft. |
| Progressive combustion engine, | 57 lbs. | 67,130 lbs. | 729 ft. |

proportional thereto, hence, the use of leaner mixtures permits building very large cylinders at a relatively small loss of power per square inch of piston.

Reverting now to some of the deductions from Fig. 2, wherein there is plotted the work of compression in the Brayton cycle as though it were

done in the power cylinder instead of in an auxiliary compressor, and in which there has been adopted an initial pressure of 175 pounds per square inch for the Brayton as against 480 pounds for the diesel.

First there is to be noted the difference in the initial strains to be withstood in the engine frame and in the maximum pressures on the bearings. Secondly, this initially low but long sustained maximum pressure results in the mean effective pressure divided by the initial pressure.

equaling 32.6 per cent as against 90/480=18.75 per cent for the diesel, affording an evenness of torque and lessened strains of the crankshaft. Thirdly, and of major importance in first cost and in upkeep, these lower working pressures eliminate the necessities of the exact machining and the maintenance of fits required where the high pressures of diesel practice must be sustained.

Working out these stresses for cylinders of 200 horsepower at 110 revolutions, the results are shown in Table I.

Another characteristic of this type of engine is its satisfactory perform-

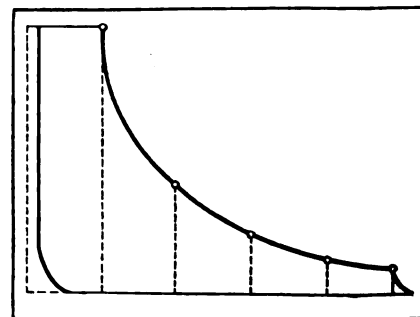


FIG. 5—CALCULATED CARD FOR 175 POUNDS PRESSURE

ance at very low rotational speeds and its very remarkable flexibility. This feature particularly adapts it to all slow speed apparatus such as reciprocating pumps and especially to screw

propeller wheels wherein efficiency rapidly diminishes with high rotation as in full lined ships or in towboats. And, in the latter, flexibility is of extreme importance.

Adapting the foregoing facts to the design of a tugboat engine, for instance, there is obtained a very interesting comparison with the present diesel powered tugs.

Most of these develop their rated power and are operated at some 220 revolutions per minute, whereas, a steam powered tug of the same size would swing a wheel holding the engine down to some 120 revolutions per minute.

With a progressive combustion engine swinging a wheel holding the engine down to 150 revolutions per minute there could be developed 475 shaft horsepower on a weight of less than 150 pounds per shaft horsepower which engine, at diesel speeds, would show 695 shaft horsepower at a weight of less than 100 pounds per shaft horsepower. And, such a 4-cylindere engine could be operated as slowly as 15 revolutions per minute.

Some of the other strikingly valuable characteristics are

1. It is inherently a 2-stroke engine with a scavenging vastly superior to any possible type of 4-stroke engine.

2. It starts and reverses without the employment of any auxiliary valves for such purposes.

3. Its valves are not subjected to the scoring so common in many other types.

4. It has a starting torque impossible in any other type and it can, efficiently, be forced far above its rating for short periods.

5. It can be built in any shops, and by any mechanics, capable of building high class reciprocating steam engines.

6. It can be run, without preheat-

ing on oils as heavy and viscous as Port Arthur light fuel oil of 22 degrees Baumé and,

7. It demands in its construction no special materials.

In view of all these outstanding superiorities it may be asked why such possibilities have been allowed to lie dormant.

An answer is that a study of the patents based on Brayton's work shows a universal failure to appreciate the underlying fault in Brayton's engines of years gone by and to the lack of any realization of certain essentials necessary to accomplishing his aims.

It may sound easy to accomplish the impregnation of the air to a uniform degree of richness while the piston is moving at various speeds and demanding air and finely divided fuel at such variable rates. This and many similar and equally hard problems needed months of experimentation to overcome difficulties of detail; but, when there can be exhibited such actual indicator cards as are shown in Figs. 3, and 4 it reminds one of Lincoln's comment when Bushnell laid before him Ericsson's plans for the MONITOR. He said that "like a girl's stocking it seemed to have something in it."

The engine from which the cards shown in Figs. 3 and 4 were taken is an experimental one of a single cylinder, single acting 8 x 10 inches running on a 2-stroke cycle in the shops of the W. A. Fletcher Co. in Hoboken, N. J. where it was constructed for Messrs. John H. Barnard and H. N. Fletcher who have personally carried the expenses of the building and of the long experimentation necessary to its development. The curves shown in Fig. 1 are taken from a report on this engine by the well known consulting diesel engineer, Louis Ford.

tion 1927. When the new vessel goes in service the Inland company will have three freighters, the JOSEPH BLOCK, and N. F. LEOPOLD, being the other two. Hutchinson & Co. Cleveland, are to be managers and will supervise the building of the ship.

On July 6, the American Ship Building Co. signed a contract to build a 600-foot bulk freighter for 1927 delivery for the Kinsman Transit Co., Henry Steinbrenner, manager. This vessel will also be built at the Lorain yard of the American Ship Building Co. In general particulars she will be practically a duplicate of the two steamers building at Lorain for the Interlake Steamship Co., Pickands Mather & Co. managers notice of which appeared in the June number of MARINE REVIEW, page 24. The length overall will be 600 feet, length on keel 580 feet, beam 60 feet, and depth 32 feet. Unlike the Pickands Mather boats this vessel will be fitted with three scotch boilers. The engine will be of the usual triple expansion type. The new vessel mentioned above for the Inland Steamship Co. will be the largest American owned vessel on the Great Lakes. She will be throughout of an entirely new design both hull and machinery but will follow quite closely the steamer FRED G. HARTWELL.

The American Ship Building Co. now have under way four big freighters for delivery at the opening of navigation next year. The Lorain plant can be said to be busy and a large number of men will be given employment.

There has been considerable talk of other orders pending. Of these a large self-unloading steamer similar to the T. W. ROBINSON for the Bradley Transportation Co. Rogers City, Mich. seems most likely to be carried out.

Hudson River Boat

From plans and specifications prepared by J. W. Millard & Bro. 17 State street, New York, bids were received for a new Hudson River boat to take the place of the WASHINGTON IRVING which had the misfortune of being rammed and sank in the Hudson river. The new steamer will be much smaller than the WASHINGTON IRVING, but she will accommodate a large number of passengers with comfort. She will have a reciprocating engine, direct connected to a screw propeller. Pusey & Jones, Wilmington, Del., were awarded the contract for this vessel with the understanding that she will be completed and ready for service at the opening of the Hudson river traffic, in 1927.

Order New Vessels

ONE of the Wabash railroad car ferries an order for which, it was noted in the July number of MARINE REVIEW, was then pending, has been placed with the Toledo Shipbuilding Co. Inc., Toledo, O. It has been intimated that the same yard has the option to take the order for a duplicate vessel.

A contract was awarded the American Ship Building Co. on July 3, for a bulk freighter of the largest class, by the Inland Steamship Co., Chicago. In general particulars the

new steamer will be similar to the Fred G. Hartwell, built in 1922, but larger. No figure as to the cost of the new vessel was given out. The dimensions are to be: 620 feet overall in length, 64 feet in beam, and 33 feet in depth. A triple expansion engine furnished steam by three scotch boilers will serve as the main motive power. The building of this ship will take place at the yard of the American Ship Building Co., Lorain, O., and it is expected that she will be ready for the opening of naviga-

British Shipping Gets Setback

Due to Continuance of Coal Strike

Brighter Outlook in Previous Forecast Has Not Materialized — Shipbuilding Production at Low Ebb—But Real Activity Indicated in New Contracts — Freight Rates Have Increased

BY VINCENT DELPORT
European Manager, Marine Review

DIFFICULTIES have befallen British shipbuilding and shipping through the continuance of the coal stoppage. On May 1, when the general strike was called, the brighter outlook which had been indicated in our previous article was suddenly and definitely checked. This is illustrated by the fact that the shipbuilding output on the Clyde for June was only 12 vessels aggregating 18,521 tons, which figure, with one exception, is the lowest monthly output for 20 years. For the first five months of this year the total output of the Clyde shipyards was 68 vessels with 140,031 tons, against 92 vessels of 259,506 tons in the corresponding period of last year. Freight rates have strengthened, especially for homeward coal and grain, but the shipowners' profits have not risen

coal mines, more orders for vessels will be received and there will be renewed activities in the yards. At present shipbuilders are experiencing steadily increasing difficulties in obtaining supplies of ship plates and sections, and in some cases work is being curtailed by lack of materials. Some vessels which have been ordered three or four months ago have not yet been laid down, and even before the coal stoppage no great haste was shown to carry on new work. This can be explained, on the one hand, by the uncertainty of the times which may have caused shipbuilders to refrain from commencing new work until the coal problem is solved. On the other hand, it is believed that owners who have ordered new ships are not pressing for delivery as they do not see much immediate prospects in shipping.

Whitworth & Co., Ltd., Wallsend-on-Tyne. Two more vessels of the same series are to be placed and it is expected that at least one award will be given to Clyde shipyards. The total value of the two liners and five cargo vessels attains £3,000,000 (\$14,550,000).

Future Prospects Look Brighter

Other contracts include three fruit-carrying vessels placed by Elders and Fyffes with Cammell Laird & Co., Ltd., Birkenhead; three fruit-carriers ranging from 3000 to 4000 tons placed by the United Fruit Co. of Boston with Workman, Clark & Co., Ltd., Belfast. The last named concern also has been awarded a contract for one high-class passenger liner of 530 feet in length. This order has been placed by Furness, Withy & Co. for their New York-Bermuda service. The liner

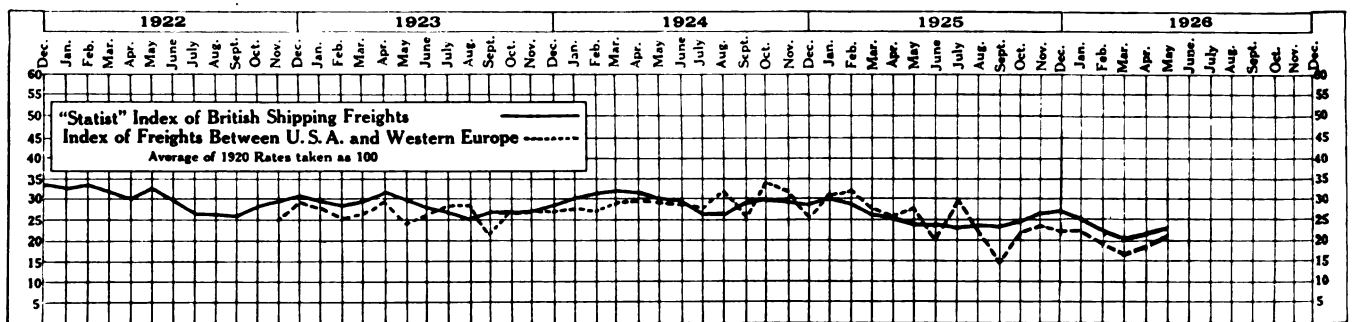


DIAGRAM SHOWING FLUCTUATION OF OCEAN FREIGHT RATES FOR FOUR YEARS AND FIVE MONTHS

accordingly and import and export business has seriously dwindled. Coal, which is one of Britain's chief exporting products, now is being imported, and between May 1 and June 24 the amount received from foreign sources was 585,000 tons, including 81,000 tons from the United States to whom a 300,000-ton contract is reported as having just been awarded.

New Shipbuilding Contracts

During the past two months interesting shipbuilding contracts have been placed, especially with the Clyde shipyards, and it is fully anticipated that when work is resumed in the

Among the more important contracts recently obtained are two North Atlantic liners placed by the Canadian Pacific railway to be built by John Brown & Co., Ltd., at Clydebank and William Beardmore & Co., Ltd., at Dalmuir. These passenger steamers will be 585 feet in length, 75 feet in breadth and 27 feet in draft, with a gross tonnage of 18,000 tons each and 4000 tons cargo capacity; each will have accommodation for 1600 passengers. The Canadian Pacific railway also has placed an order for three 10,000-ton freighters with Barclay, Curle & Co., Whiteinch, William Denny & Co., Dumbarton, and Armstrong,

will be supplied with internal combustion engines of the Fairfield-Sulzer type built by the Fairfield Shipbuilding and Engineering Co., Glasgow. The Caledon Shipbuilding and Engineering Co., Dundee, has a contract for a 3000-ton passenger and fruit-carrying steamer for the Yeoward Line, Liverpool, and another contract for a 580-ton cattle-carrying steamer for the Limerick Steamship Co. The Greenock Dockyard Co. is to build an 8000-ton oil tank steamer, 410 feet in length, for Gow, Harrison & Co., Glasgow.

The effects of the coal stoppage are not such as to induce vessels to turn

into British repairing slips, and a large amount of this work is lost to continental ports, especially Holland. On the other hand, an important ship-repairing contract has been placed with the Grangemouth Dockyard Co. which is to carry out extensive repairs to the steamer Porthcawl, of 1504 tons, which ran ashore on the Island of Inchcolm last February.

Lloyd's Shows Temporary Setback

Lloyd's Register of shipbuilding returns show that for the quarter ended June 30 the tonnage under construction in Great Britain and Ireland was 841,338 tons, only 1732 tons less than at the end of March, but about 252,000 tons less than the tonnage building twelve months ago. The tonnage on which work was suspended at the end of June amounted to nearly 78,000 tons, which is about the same as at the end of June, 1925. The present totals are the lowest recorded since September, 1909 and are 1,049,000 tons below the average tonnage building during the twelve months immediately preceding the war which was 1,890,000 tons. An appreciable decrease is shown in the tonnage commenced during the quarter, namely 168,483 tons, as compared with 193,121 tons during the first quarter of the year. The tonnage launched during the second quarter was 171,725 tons, or 18,980 tons lower than that for the previous three months. There are, at the present time, under construction in Great Britain and Ireland 13 vessels of between 10,000 and 20,000 tons each, and three over 20,000 tons. The tonnage of motorships building at the end of June in Great Britain and Ireland was 293,544 tons, amounting to 53.8 per cent of the steam tonnage under construction, as compared with 52.7 per cent at the end of the previous quarter.

Trials are to be effected with a new Parsons turbine and the results are being awaited with keen interest as it is claimed that the new steam plant will be cheaper and lighter than diesel engines and that, in many cases, it will not cost more in fuel which can be either coal or oil. The turbines will be supplied with steam of 500-pound pressure, superheated to 700 degrees Fahrenheit produced by water-tube boilers having an efficiency of from 80 to 85 per cent. Among recent developments in motor shipbuilding it is of interest to note that two 21,000-ton motor passenger liners ordered by the Shaw, Savill and Albion Co. will be quadruple-screw vessels. Certain advantages have been recognized in this system since the construction of the AORANGI. The largest motor-liner

on the stocks, the 30,000-ton AUGUSTUS now building in Italy, will be fitted with four screws. The adoption of superchargers also is extending, particularly in Italy. On May 31 the S. S. NERISSA was handed over to her owners, the New York, Newfoundland and Halifax Steamship Co. by William

Hamilton & Co., Port Glasgow. The contract was signed on Nov. 3, 1925. The keel was laid in seven days and the vessel was launched in 148 days. On the trials the vessel attained a speed of 15½ knots, which was over contract. This shows what can be done in a British shipyard.

Deep Loaded Sea Trial M. S. Lio

En Route San Pedro to Seattle, May 12, 1926

THE results obtained from the trial show:

1. The engine developed at normal speed of 85 revolutions per minute the guaranteed 2800 shaft horsepower, and is capable of delivering over 3000 shaft horsepower.

2. The normal revolutions of 85 revolutions per minute were obtained without exceeding 90 pounds per square inch mean indicated pressure. The engine

is capable of increasing the revolutions to 90 revolutions per minute and over.

3. The fuel oil consumption being 0.419-pound per shaft horsepower hour, was well below the guaranteed consumption of 0.44-pound.

4. Although no fair test could be made of the vessel's speed, due to rough weather and deeper draft than normal, it is expected a sea speed of 10½ knots will be obtained.

General Characteristics and Trial Data

| | | | |
|------------------------------------|---------|------------------------------------|---------|
| Length overall | 450'-0" | Duration of trials | 6 hours |
| Length, B. Perpendiculars..... | 430'-0" | Average R. P. M. | 85.8 |
| Beam—Molded | 50'-0" | Average M. I. P. | 89.54 |
| Depth—Molded | 38'-0" | Average I. H. P. | 4000 |
| Draft—Normal | 25'-4½" | Average S. H. P. | 2900 |
| Block Coefficient | 0.803 | Average Fuel Cons. Lbs/Shp/Hr..... | 0.419 |
| D. W. T. Normal, tons | 10,250 | Fuel Oil Gravity—Baume..... | 24.6 |
| Actual loaded draft—Trials | 26'-0½" | B. T. U. per pound | 19,000 |
| Actual Loaded D. W. T.—Trials..... | 10,675 | Sea Speed—knots | 10½ |

Dredge Manufacture

in a New Way

DREDGES in use at present are assemblies of the fabricated parts made by several manufacturers. They have been purchased from manufacturers, who furnish either the dipper, the lower unit or the hull, and who contracts with others to furnish that part of the dredge which he is unable himself to manufacture.

The American Brown Boveri Electric Corp., New York City, believing economy, speed in delivery and more efficient equipment can be furnished in a machine constructed completely at one plant and under one responsibility, has formed a new department to design and build dredges in their entirety.

Since it is obvious that a dredge is primarily a marine job, the company feels especially well equipped as it has organized the large plant and ways of the New York Shipbuilding Corp., (now American Brown Boveri Electric Corp.,) at Camden, New Jersey, to give this specialized service.

The designs and manufacturing rights of A. W. Robinson, a specialist

in the design and construction of dredges throughout the world, have been acquired and Lieut. Col. R. W. Berdeau, for many years with the dredging division during the construction of the Panama canal, has been placed in charge of the department.

Dredges, as a rule, must be built under special plans, but many are susceptible to standardized designs and where possible such plans will be developed and resulting economy for the buyer obtained.

Deviations, of course, will be made from these standards as required by the purchaser's special operating problem, but where standardized sizes can be used, the company recommends the 5, 7½ and 10-cubic yard types for dipper dredges and the 16, 24 and 30-inch sizes for suction dredges.

In addition, the dredge and harbor department is prepared to furnish promptly smaller craft for harbor improvement such as, drill boats, car floats, barges, scows, floating pile drivers, pipe-line pontoons, tugs, ferries and floating cranes and any other special types.

Protect Shipbuilding

(Continued from Page 22)

and is in unrestricted and unprotected competition with all foreign ships (no matter how low their standards of wages, personnel, equipment, or safety) and is entitled to the refund principle as existing in our protected tariff principle.

3. That such refund shall be the amount of the tariff on the component elements of a ship deducted from the whole price of the ship.

4. That such export commodity refund shall apply to the actual American shipowner of such ship as certified by the treasury department.

5. At the time of building, charter rates shall be contracted for between the United States government and the owner of the ship, based upon the factors of age and depreciation at the time of the government requisition of the ship; the vessel being the security for its serving in the foreign trade.

6. That this export commodity refund shall be paid to the shipowner,

upon proper evidence and certification of the completion of the construction of a ship meeting the requirements as hereinafter outlined.

7. That such export commodity refund shall be in the form of a special issue, as required, of United States government 25-year bonds bearing interest at the lowest rate of interest of any United States government bond at time of issue and to be accepted at not less than par or whatever may be the market premium for such bonds at time of issue.

8. That the foregoing refund shall apply only to such ships as are built according to plans approved by the United States government, the purpose being to have such ship or ships so constructed as to be constantly available for emergency, or to be reasonably but more rapidly convertible for naval or war use.

The principles outlined form the basis of a bill introduced in congress by Senator George Wharton Pepper of Pennsylvania and designated as the overseas trade act of 1926, which has the indorsement of the entire

shipbuilding industry.

In adopting this measure as the legislative policy of the industry American shipbuilders are asking nothing for themselves except an opportunity to compete on something approaching equal terms with their foreign competitors. Enactment of this bill is certain to encourage the construction of vessels for the foreign trade and therefore will go a long way toward rehabilitating the American merchant marine.

Appointed Secretary

Roy H. Morrill, secretary of the shipping board was recently transferred to the position of assistant to Commissioner Plummer, bureau of traffic.

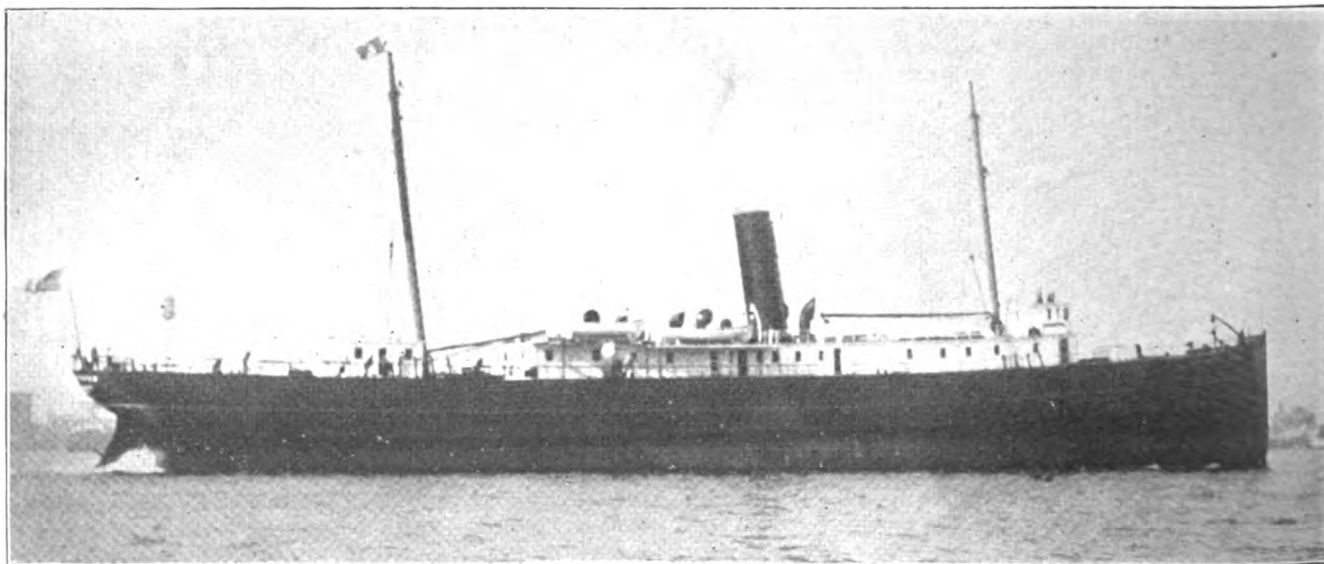
Samuel Goodacre was appointed by the board to succeed Mr. Morrill as secretary. Both of these men have been in the employ of the shipping board for several years. Mr. Goodacre is at present budget officer of the board and this office will in the future be combined with that of secretary.

Spend Large Sum on 40-Year Old Vessel

THE S. S. Herman Winter of the Eastern Steamship Lines, Inc. successfully completed her trials on May 29, 1926 after reconditioning at the Simpson Dry Docks plant of the Bethlehem Shipbuilding Corp. Ltd., and is now in service on the owners' Boston and New York line. It is truly a remarkable vessel, which after forty years of almost continuous service, is considered worthy of a \$200,000 expenditure for reconditioning. In the light of our present day experiences

with deterioration of recently constructed tonnage, it is unusual to find a vessel of the Herman Winter's age in an equal state of preservation. This vessel of the hurricane deck coastwise type with three decks, single bottom iron hull, single screw with deck hatches and side ports, was built at Wm. Cramp & Sons Ship & Engine Building Co. at Philadelphia in 1886. Her length over all is about 285 feet, beam 41 feet 7 inches and depth 19 feet 3 inches.

The reconditioning was carried out from plans and specifications prepared by Theodore E. Ferris, the well known naval architect and marine engineer. The original installation was a compound engine with air pump and condenser in one unit. This engine was still giving good service, but the castings in the way of the condenser were so deteriorated that the removal of the whole unit was necessary. The boilers consisted of four two-furnace scotch boilers, two forward and two



THE S. S. HERMAN WINTER IN BOSTON HARBOR AFTER ELABORATE REBUILDING INCLUDING NEW BOILERS AND ENGINES

aft, with side bunkers running the length of the fire room and engine room. The record of these boilers showed that they were the original ones installed in the ship.

All equipment in both the engine and boiler rooms was completely taken out. Nineteen new floor frames together with a new keel, keelson and web frames were installed. These frames, which were directly under the boilers, were the only frames on the ship which showed any serious corrosion. The side bunkers in the engine room together with the screen bulkhead were removed.

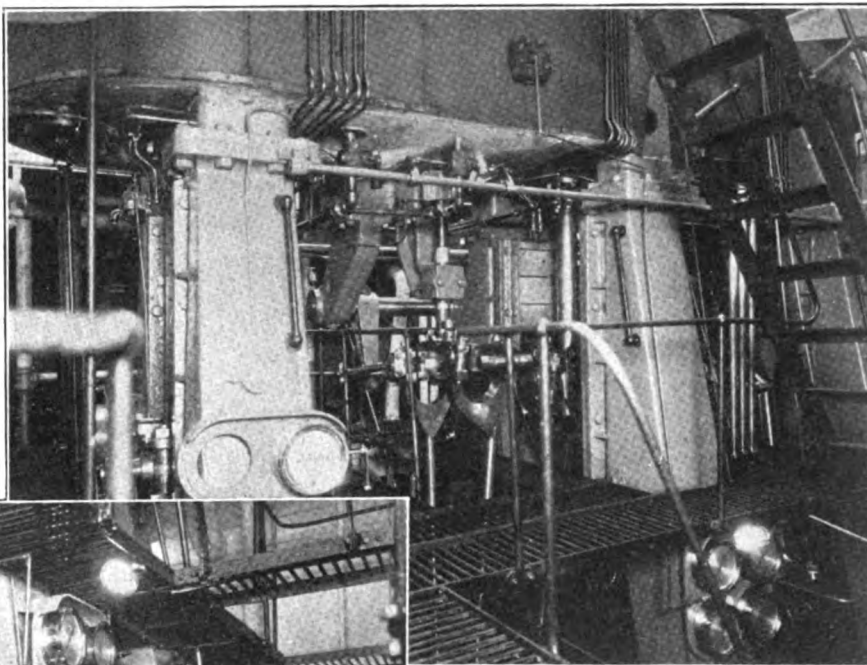
A new engine foundation was installed. The new engine is a triple expansion marine type with cylinders 23 x 39 x 66 inches in diameter by 42 inches stroke developing 2300 indicated horsepower built by the Hooven, Owens, Rentschler Co., Hamilton, O. In addition to the engine a new independent Worthington condenser was installed. All new pumps and auxiliaries were installed together with a forced draft blower and engine. The new boilers are of the water tube type,

built by the Babcock and Wilcox Co. A new screen bulkhead was located forward of the old screen bulkhead and a new athwartship bunker was installed forward of the boilers. After installation of the boilers, new uptakes, fidley top and smoke stack complete were fitted.

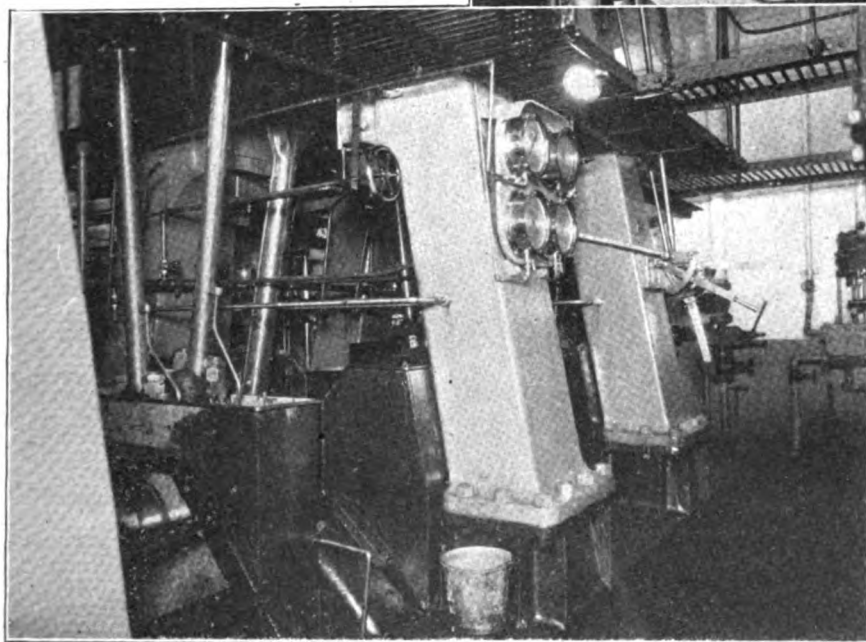
One of the pleasing results of this reconditioning is that although a larger engine was installed together

with additional machinery, the present arrangement is more roomy. The fireroom has a much larger working space and it is possible to walk completely around the boilers. The engine room also, due to the well planned arrangements, permits of ready access to all parts without crowding.

The remainder of the vessel was given a thorough scaling, cleaning



THE SAME ENGINE FROM THE MIDDLE GRATINGS



VIEW OF THE NEW TRIPLE EXPANSION STEAM ENGINE INSTALLED IN THE HERMAN WINTER—LOOKING FORWARD AND TO PORT FROM ENGINE ROOM FLOOR

and painting and new masts were installed.

Considerable speculation as to the advisability of such an expenditure on a vessel of this age is being made in marine circles. The Eastern Steamship lines, however, feel that the hull being in excellent condition warranted the new engines and boilers, which make it a valuable vessel to them for many years to come. The general design makes her particularly adapted to the freight coastwise trade and she should therefore have far greater earning power than a much cheaper but unhandier vessel.

Diesel Electric Tug Enters Service

THE first diesel-electric vessel to be assigned to the port of Norfolk and the Virginia Capes arrived at the Pennsylvania railroad dock recently to enter permanent services there. The tug which, except for the main diesel oil engines, is operated throughout by electricity will run between Cape Charles

and Norfolk. Incidentally the arrival of his craft increases the local towing fleet of the Pennsylvania railroad to a total of ten tugs of all kinds.

The arrival of the WICOMICO was marked by the presence of a large number of railroad officials and others invited to inspect the new tug. Among those at the dock were: Capt. Edward

Richardson, boatmaster of the Pennsylvania railroad at Norfolk, William Ives, Norfolk, manager of the Westinghouse Electric & Mfg. Co., and Cecil Gray, representing the transportation department of the same company.

While the use of the diesel-electric tug boat is a departure from estab-

lished tug boat practice in the Norfolk district, the application of the principle to marine propulsion has been well tried out by the Pennsylvania railroad. The WICOMICO is the fourth vessel of its kind built for the company, leading operators in the United States, of diesel-electric vessels. The WICOMICO is 122 feet over all with a beam of 26 feet and a draft of 12 feet. The boat is equipped with two Winston diesel engines of a total of 750 horsepower driving Westinghouse direct current generators of a total of 500 kilowatts driving a Westinghouse motor which is rated at a total of 575 shaft horsepower. In addition to the main power plant, the tug is equipped with a powerful motor gen-

erator unit for lighting service.

The auxiliaries on the WICOMICO are electrically operated. The boat is ordinarily controlled by the pilot, all maneuvering being done directly by the pilot through control pedestals corresponding to the ordinary ships engine telegraph. This system of control eliminates all signals between pilot and engineer, with consequent possibility of confusion in signals and loss of time. The Westinghouse variable voltage control is used throughout. The WICOMICO, however, has two distinct control stations, one in the pilot house already referred to, while the other is in the engine room for emergency purposes. The systems are distinct and are interlocked so that

either one or the other is in circuit.

All heating, cooking and refrigerating on the tug boat is done electrically constituting a decided improvement in such practices as compared with older steam driven tug boats. For fire fighting purposes the WICOMICO is equipped with a powerful motor driven pump capable of serving two fire monitors, one on top of the pilot house and the other is on the forward deck.

The switch board is so arranged that the power of the main generators, if desired, can be diverted to the fire pump motor, while the other main generator serves the propeller motor in case of such an emergency, giving exceptional flexibility.

Launch Most Modern Type of Dump Scow

THIS dump scow is 223 feet long on deck, 42 feet 4 inches beam, 15 feet deep, and has a capacity of 1500 yards with a free-board of about 18 inches. There are seven self-dumping pockets each 23 feet long in the clear. The dumping doors are unusually large and heavy and the door closing gear is operated by a gasoline engine located in an engine room amidships below the level of the deck. This engine through chain drives and a fore and aft shaft, operates all of the self-dumping doors.

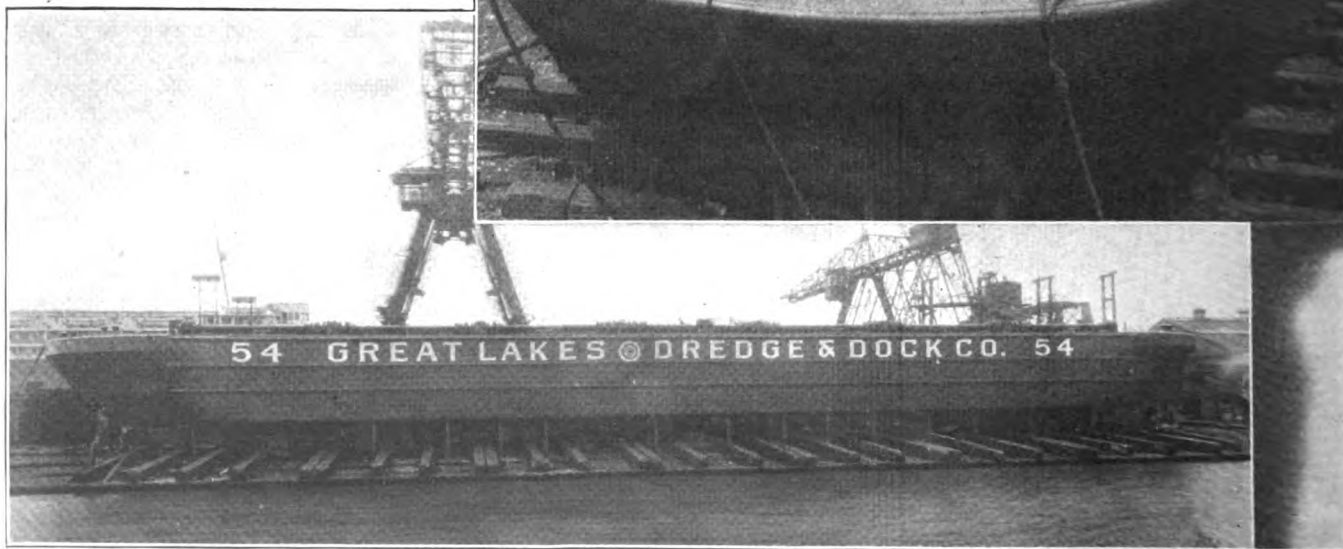
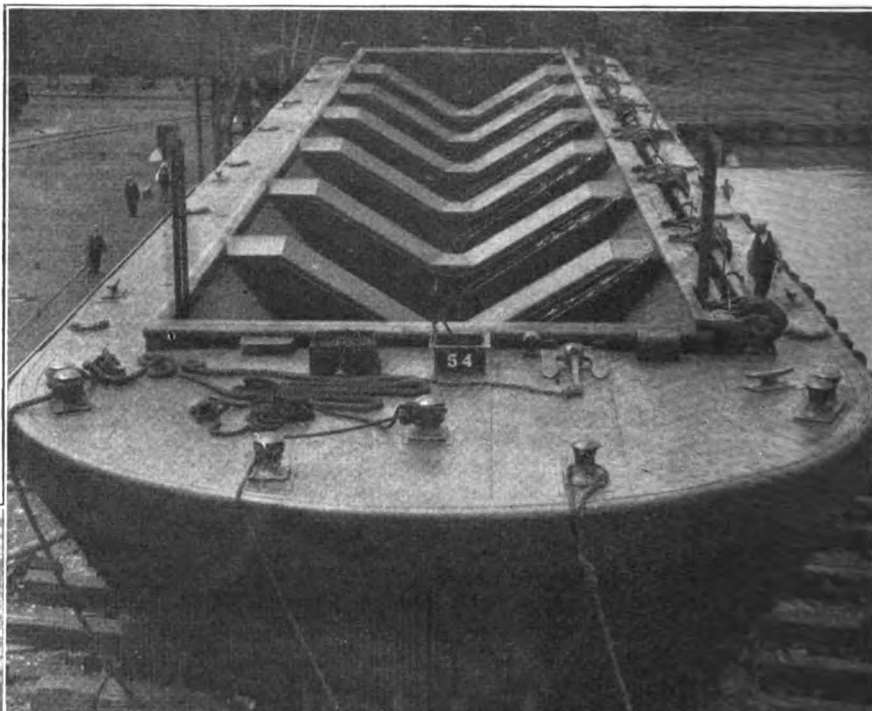
A living room below deck in the stern is provided with quarters for two men with sleeping berths, galley stove, sink, etc.

One of the accompanying illustrations brings out very plainly the way in which the bulkheads between the pockets are cut down. The arrangement allows the dredge to dump the bucket anywhere over the center of the scow, without being careful to hit the

exact center of the pocket every time. The bulkheads and coamings are protected with heavy timber, covered with 15-pound plate, and the scow throughout is designed to be in keeping with the modern type of ten-yard dipper dredge which is used for load-

ing this dump scow.

The scow was built by the Great Lakes Engineering Works River Rouge, Detroit for the Great Lakes Dredge & Dock Co. Chicago. The illustrations show the scow shortly before the launching June 23, 1926.



How Oil Burning Ships Are Bunkered on the Lakes

BY E. C. BARRINGER

CONSUMPTION of bunker fuel oil and diesel engine oil on the Great Lakes, although expanding, has not yet attained the proportions where supplies are available in the same manner and to the same extent as coal. It is the rule that vessel owners buy through brokers and take delivery in tank cars, pumping direct from cars to vessels.

At this time the annual consumption of bunker fuel oil on vessels operating out of Chicago is about 4,000,000 gallons, and of diesel oil about 500,000 gallons. The principal source of supply is the Smackover field. The bunker fuel is of the 18-22 gravity grade, while the diesel oil consumed runs from 24 to 32 gravity. The cost, aboard vessel, of bunker fuel is from 4.8 cents to 5 cents per gallon, and of diesel fuel 5½ cents to 8 cents.

The largest user of bunker fuel is the Rutland-Lake Michigan Transit Co., managed by D. Sullivan & Co., Chicago, whose package freighters BACK BAY, BURLINGTON and BENNINGTON are oil burners. In the season of 1925 these vessels loaded 35,550 barrels of oil at Chicago and 2225 at Sarnia, Ont., a total of about 1,585,000 gallons. Each vessel will load five to six tank cars, or 50,000 to 60,000 gallons, at a time. In the spring and fall months it takes three hours to fuel, and in summer two hours. The oil is pumped direct from the cars into the vessel tanks.

Oil Burning Passenger Ships

THE NORTH AMERICAN and SOUTH AMERICAN, passenger steamers operated by the Chicago, Duluth & Georgian Bay Transit Co., have a capacity of 100,000 gallons each. They are fueled at Chicago and usually take on about 60,000 gallons, ample for the round trip from Chicago to Buffalo. In the course of a season this fleet consumed about 1,000,000 gallons. Loading also is direct from tank cars to vessel.

The Chicago & South Haven Steamship Co., Chicago, requires about 400,000 gallons per season for its passenger steamer IROQUOIS, operating out of Chicago to West Michigan ports. The contents of three tank cars suffice for one fueling.

The Great Lakes Dredge & Dock

Co. burns oil under the boilers of the tugs ANDREW H. GREEN and JAMES H. CASSIDY at Chicago. Its annual consumption approximates 1,000,000 gallons. The smallness of the tanks of these tugs has made it advisable for the company to install tanks at its fuel docks rather than to fuel direct from tank cars.

The Construction Materials Co., Chicago, has a diesel electric propelled steamer in its SANDMASTER. Working about 9 months of the year, this vessel requires about one car or 10,000 gallons per week. A line is run direct from the tank car to the vessel's tanks. On a 9-month schedule this interest would require upward of 350,000 gallons of diesel oil.

Facilities Will Improve with Demand

The Great Lakes Dredge & Dock Co. has four tugs, MARY C., MARTHA C., BADGER STATE and HOOSIER STATE fitted with diesel engines. As is the experience of this company with bunker fuel, it is more economical to discharge tank cars into tanks at its fuel docks and fuel the tugs from these tanks. This company has diesel engines on several dredges and on June 12 launched the diesel propelled tug, WILLIAM A. LYDON, 108 feet long, 26 feet beam and 14 feet deep, at Manitowoc, Wis. The Great Lakes company now consumes 150,000 gallons of diesel fuel per year but will increase this figure.

Efforts of some retailers of domestic fuel and other oils at Chicago to obtain vessel business have not been successful thus far. Demand has not been sufficiently broad to warrant the installation of tanks and pumping facilities on the waterfront, and brokers can supply the tank car trade as economically. At least one retailer has made a thorough study of the situation and cannot see business sufficient to justify the expenditure. Most of the bunker oil taken aboard at Chicago comes out of tank cars consigned to the Randolph street dock and frequently vessel owners accommodate each other and trade supplies. It calls for some detail to keep tank cars rolling from Texas into Chicago to meet the vessel schedules.

The Standard Oil Co., of Indiana is not a factor in this lake trade in bunker and diesel oils. Its stand is

that it is more economic to refine crude oil. At its numerous Great Lakes stations, where it markets lubricating oil, gasoline, kerosene and similar products, it has for sale a distillate that commands about 8c a gallon. It has many customers in the owners of small craft having diesel engines or burning bunker oil, but its price does not attract the large business. The Standard company has not sought the domestic oil trade, either. Its two Great Lakes tankers, WILLIAM P. COWAN and RENOWN, are oil burners, using waste from the company's Whiting, Ind., refinery.

It is quite evident that fuel oil and diesel engine oil is not a factor in the bulk freight trade of the Great Lakes. However, there are two large bulk freighters, the HENRY FORD and BENSON FORD fitted with diesel engines using an estimated total of 2,500,000 gallons a year for both. The TWIN CITIES and TWIN PORTS small diesel electric cargo vessels of the Minnesota-Atlantic Transit Co. will probably use at an estimate about 400,000 gallons a year for both.

Number of Diesel Ships Grows

Another fleet of growing importance using diesel engines for motive power is that of the Isthmian steamship lines with the STEELMOTOR and STEELVENDOR already in operation two years and the STEEL ELECTRICIAN (diesel electric) and STEEL CHEMIST starting this summer. The four vessels it is estimated will require about 1,000,000 gallons of diesel engine fuel per year. These vessels carry news print from Canadian ports on the St. Lawrence to Chicago and steel products from Lorain to Montreal. Bunkers are generally taken on at Sarnia, Ont. supplied by the Imperial Oil Co. The rates have been 7 to 7.3 cents per imperial gallon which is equivalent to 5.6 to 5.8 cents per U. S. gallon.

The Standard Oil Co. of Ohio through not actively engaged in the ship bunkering business is prepared to take care of any customers that apply. Vessels may bunker from tank cars at Cleveland and direct from the refinery at Toledo. Ports from Conneaut to Toledo are served at seaboard prices plus 1c to 1½c freight.

From the Old Log Book

Stray Items About the Great Lakes, Atlantic, Pacific and Gulf Coasts and Inland Rivers from MARINE REVIEW Files of 10, 20, 30 and 42 Years Ago

AUGUST, 1884

THE following interesting tale purporting to be an account of actual facts was published in the August 17, 1884, issue of the *Marine Record*, then the name of MARINE REVIEW and a weekly.

ACCORDING to the story, an English lady with a baby took passage on a vessel from Kingston, Jamaica to London. A large, strong and active monkey on board the vessel took a fancy to the lady's child, a baby about two months old. The monkey followed the mother from place to place watching her as she rocked and fondled her little one. Suddenly, on a beautiful afternoon, a distant sail attracted the attention of the passengers. The captain politely offered the lady the use of his glass. She placed her child on the sofa and had just raised the glass to her eyes when a cry was heard.

TURNING quickly she beheld a sailor in pursuit of the monkey which had grasped the infant firmly with one arm and was nimbly climbing the shrouds. The mother fainted as the monkey reached the top of the mainmast. The captain was at his wit's end. He feared if he sent a sailor in pursuit that the monkey would drop the babe. Meanwhile the monkey was seen to be soothing and fondling the child. After trying in many ways to lure the animal down, the captain ordered the men below and concealed himself on deck. In a moment, to his great joy, he saw the monkey carefully descending. Reaching the deck it looked carefully around, advanced to the sofa, and placed the child upon it. The captain restored the child to its mother who was soon satisfied that her darling had escaped without injury.

AUGUST, 1896

THAT working conditions of the man who goes down to the sea in ships today is better than they were 30 years ago is very evident from a brief item in the August 6, 1896,

number of MARINE REVIEW which was then a weekly.

ACCORDING to the engineer of an English tramp steamer, on the larger British lines sailing from such ports as London, Liverpool and Southampton, bedding, bed and other linen, soap and matches were provided by the company, but in most of the tramps or 'Geordies' hailing from the Northeast coast, this sort of equipment was left for the engineer to provide. When it came to bedding, a humble straw bed or 'donkey breakfast' as it was facetiously called, used by firemen and sailors, was said to be, although rather hard and prickly to get accustomed to, as healthy a mattress as could be found.

AN INTERESTING comparison is given of wages on ocean and lake ships of 30 years ago. For this comparison the highest lake wages of that day were given. While the wages on Red D Line steamers from New York to Venezuela were quoted to establish the ocean rates. The table follows:

| | Red D Line per month | Lakes per month |
|-----------------------|-------------------------|----------------------|
| Captain | \$200 | \$150.00 to \$175.00 |
| First mate | 80 | 70.00 |
| Second mate | 60 | 50.00 |
| Engineer | 125 | 112.50 |
| First asst. eng. | 80 | 79.00 |
| Firemen | 40 | 34.00 |
| Quartermasters | 30 | 34.00 |
| Sailors | 25 | 34.00 |

AUGUST, 1906

THE MARINE REVIEW for August 7, 1906, carried an interesting illustrated article on floating docks. This material was compiled by William Denton, well known shipbuilder on the Tyne. Up to that time docks had been built in Britain for the British, Japanese, Spanish and Natal governments also for Germany, Suez canal, Port Mahon, Russia, West Africa and for many ports in the United Kingdom. According to records there were at that time not less than 210 floating docks in use in all parts of the world. Some of these docks had been in service over 40 years, notably the Alexandria and the Callao docks. The first dock at Bermuda had been in use 37 years. However none of these docks had been constructed on self-docking principles.

Illustrations were shown of floating docks at Bermuda, Port Said, Durban, Forcados in Africa and the offshore dock at Sunderland.

SHIPPING men do not change much apparently in their temperament and psychology from generation to generation. It can quite commonly be heard that there is today too much tonnage on the Great Lakes for the freight to carry. In view of this old cry it is interesting to note from the MARINE REVIEW of 20 years ago that even then the cry of too much tonnage was not new. The item referred to goes on to say:

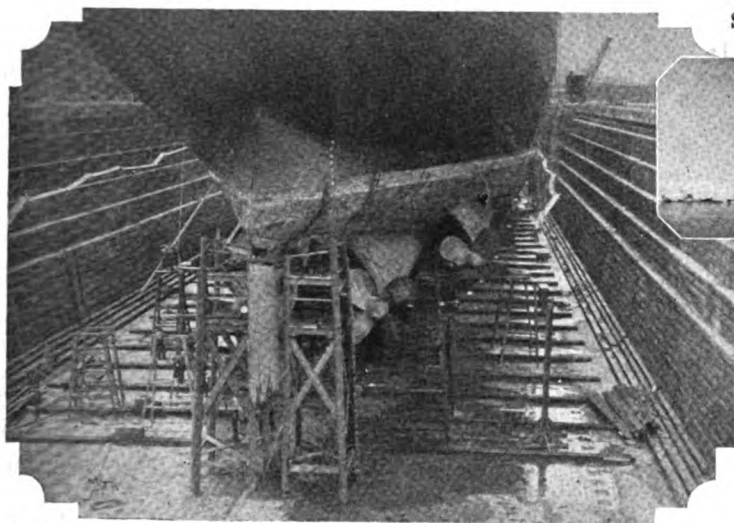
THE CRY of too much tonnage on the Great Lakes is not new. It originated in 1874 when the V. H. Ketchum was launched, and it has been sounded, if not yearly, at least biennially since. Yet the tonnage of 1874 would cut a sorry spectacle in the trade of today."

AUGUST, 1916

AN ACCOUNT is given in the August, 1916, MARINE REVIEW of the arrival of the German submarine DEUTSCHLAND on its peaceful mission to the United States. The DEUTSCHLAND, called in this account, a German Lloyd merchant submarine, arrived at the harbor of Baltimore on July 9, 1916. She was under the command of Capt. Paul Koenig. It was pointed out that aside from its purely commercial aspect the arrival of the DEUTSCHLAND was of history making importance on account of the opportunity it disclosed for carrying on merchant shipping business uninterrupted by the blockade. We know now that this was an optimistic overstatement of facts. The submarine did not become a factor in commercial shipping in running the blockade and it was the complete blockade of all German ports which helped to bring the people of that country to a state of mind which finally welcomed peace.

IT took 16 days for the DEUTSCHLAND to cross the Atlantic. The vessel was 316 feet long and could on the surface attain a speed of 14 knots.

Latest Marine News in Pictures



Leviathan in Boston drydock for her periodic painting. A good view of two of the four huge propellers

Steamers Como and Boardman breaking the ice April 18, 1926, in their attempt to get into Lake Huron. The Boardman was icebound for days



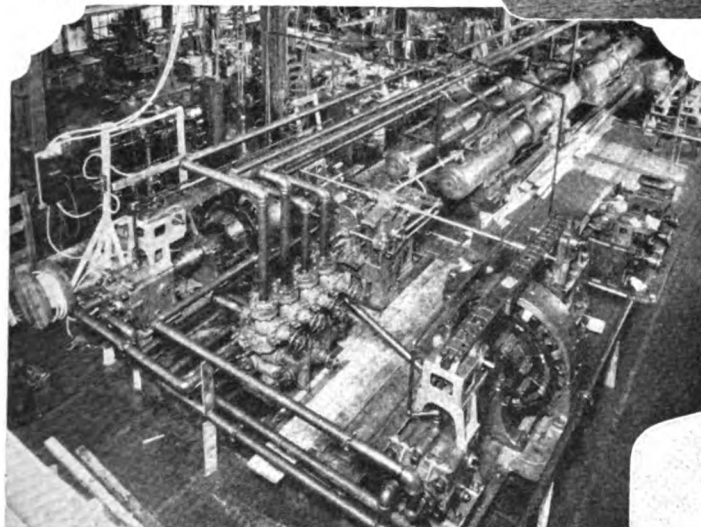
Steamer Boardman bucking the ice in entrance to Lake Huron the latter part of April



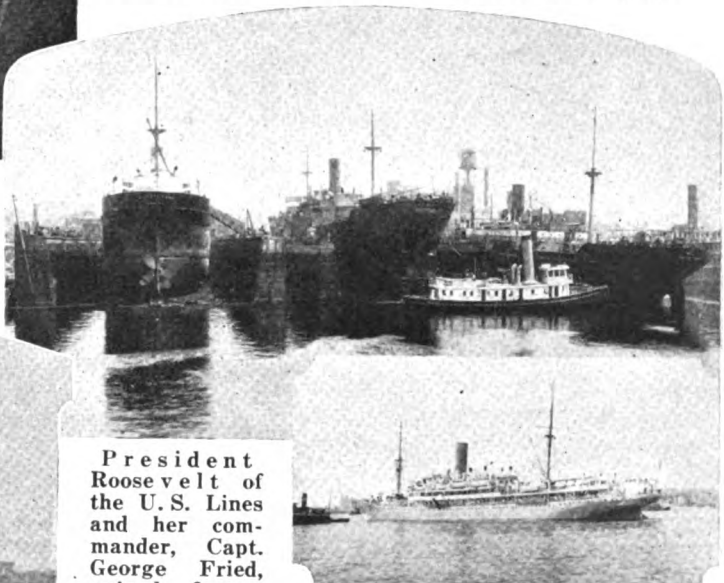
Samuel Berger, Jewish chef on the S. S. Republic of the United States line in kosher kitchen. All cooking is done by electricity



Morse Drydock & Repair Co.'s upper yard at foot of Seventeenth to Nineteenth streets, Brooklyn, N. Y. Steamers Scottsburg and Westalsec are in drydock and the steamer Afel at dock. Formerly the Alderton Dock Yard, Ltd., bought by the Morse Company

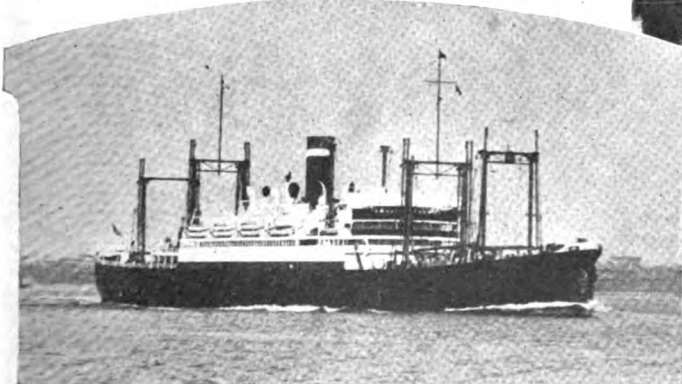


Mammoth electro-hydraulic steerer for the U. S. Airplane Carrier, Lexington in the shop of the American Engineering Co., Philadelphia. The highest type of engineering skill has gone into the making of this modern steerer



President Roosevelt of the U. S. Lines and her commander, Capt. George Fried, gained fame through the skillful rescue of the crew of the freighter Antiope

Passenger and freight steamer Njassa of the Hamburg-American Line in New York harbor



Good Lubrication Is Essential

Old Method on the Great Lakes Is Wasteful and Ineffective — Should Follow Expert Advice for Best Results

BY T. M. GUNN

THERE are several reasons for a difference between marine lubrication practice on the Great Lakes and on salt water. Some of the reasons are more or less permanent, while other reasons came into existence under conditions existing many years ago—conditions that have now passed by. However, the effect of these past conditions still remains, with its influence on present day lubrication practice.

The use of large quantities of fresh water on machine parts does not produce corrosion as does salt water. Due to this fact it became a practice early in the days of Great Lakes shipping to use water freely as a remedy and preventative of hot bearings. Although the art of lubrication has been so developed as to make the use of water unnecessary, the practice has been continued on the Great Lakes.

In the early days, lard oil was used extensively on engine bearings. Later the use of a compounded marine engine oil was found advantageous. Both of these lubricants produce a very strong emulsion when agitated with water. If the lubricant is in the bearings, this emulsion is advantageous as it renders the lubricant very adhesive and not easily washed away by water.

Oil Emulsification Troublesome

For the lubrication of crosshead and crank pins, oil is fed from a lubricator located on the engine cylinder, through a wick dropper to a wiper cup, located on the crosshead or the upper end of the connecting rod. The wiper cups supplied for this purpose have generally been narrow and deep, and are packed with a ball of horsehair or other material, which is prevented by a wire mesh from flying out of the cup. The horsehair with which the cup is packed becomes soggy in time, and forms a ball that is often churned back and forth in the cup, acting as a mixer for the oil and such water as happens to fall in the cup. This produces a heavy emulsion in the cup—so heavy that it often stops up the pipes and holes leading to the parts to be lubricated.

To avoid stopping up the oil passages with emulsion the engineers using lard oil, found it necessary to mix with it a pure mineral oil in order to

reduce the strength of the emulsion. With the introduction of the compounded oil, the practice of mixing with it a mineral oil has been continued.

This practice of mixing oils has a number of disadvantages and dangers. A high quality marine engine oil, presumably, is skillfully manufactured to meet the requirements of high pressures found in the bearings of marine engines, and has behind it the reputation of the manufacturer. The moment that this oil is mixed with something else, it ceases to be the same oil, and the responsibility of the manufacturer ceases.

In addition to this, such mixing

tures that can be produced. In other words, it is already the correct mixture, produced by experts.

If it were possible to prevent all oil splash and condensate from falling in the cup, the emulsion would be avoided. The presence of water cannot, however, be altogether prevented. As a second step in prevention of the emulsion it is beneficial to replace the horsehair or waste by a mass of tangled copper wire. The mass of copper wire is sometimes held in place by a wire screen. No. 36 copper wire is a desirable size for this purpose. When this mass of wire is used, the oil and water present in the cup are not mixed into an emulsion, because the wire can be kept from churning as does the horsehair, and, as a result, the oil flows freely to the various bearings.

Modify Lubricating Oil Equipment

The trouble referred to might be eliminated through changing the type of cups and other lubricating equipment, but it is difficult to find a time when this can be done. Ships on the Great Lakes are in continual service from the time that they are put in commission in the spring until they are laid up in the fall. As soon as these boats are laid up the engineers are discharged. During the period of service, the turn around of the ship is usually only a few hours in each port, leaving no time for repairs or modifications other than what are absolutely necessary.

For the above reasons these ships generally operate during their full lifetime with the same lubrication devices that were fitted by the shipyard.

Turning now to the practice on ocean-going steamships, we find that the mixing of oils is practically unheard of there. Moreover the use of water on bearings is comparatively rare and on the decline. At the same time the lubrication of these vessels is better than it ever was and the cost of lubrication is low because of the decrease of consumption.

It is common today to find ocean-going vessels not even provided with a complete water service system for the bearings. Even for the thrust bearings, the modern practice is to avoid the mixing of water with the oil.

Lubrication Important

This is a day of specialization in every line of endeavor and the advice of the specialist is eagerly sought. Why not apply this rule in so vital a matter as the proper lubrication of the machinery on shipboard? In this article the inefficiency of home made lubricants or compounds, and traditional methods of application for vessels of the Great Lakes, is clearly pointed out. Why not accept a recognized high grade lubricant, compounded after years of study and experiment, in correct proportions, from the best materials and then apply it according to proved and successful methods? Surely those who have made a deep life study of lubrication are best fitted to solve this problem in the most efficient manner.

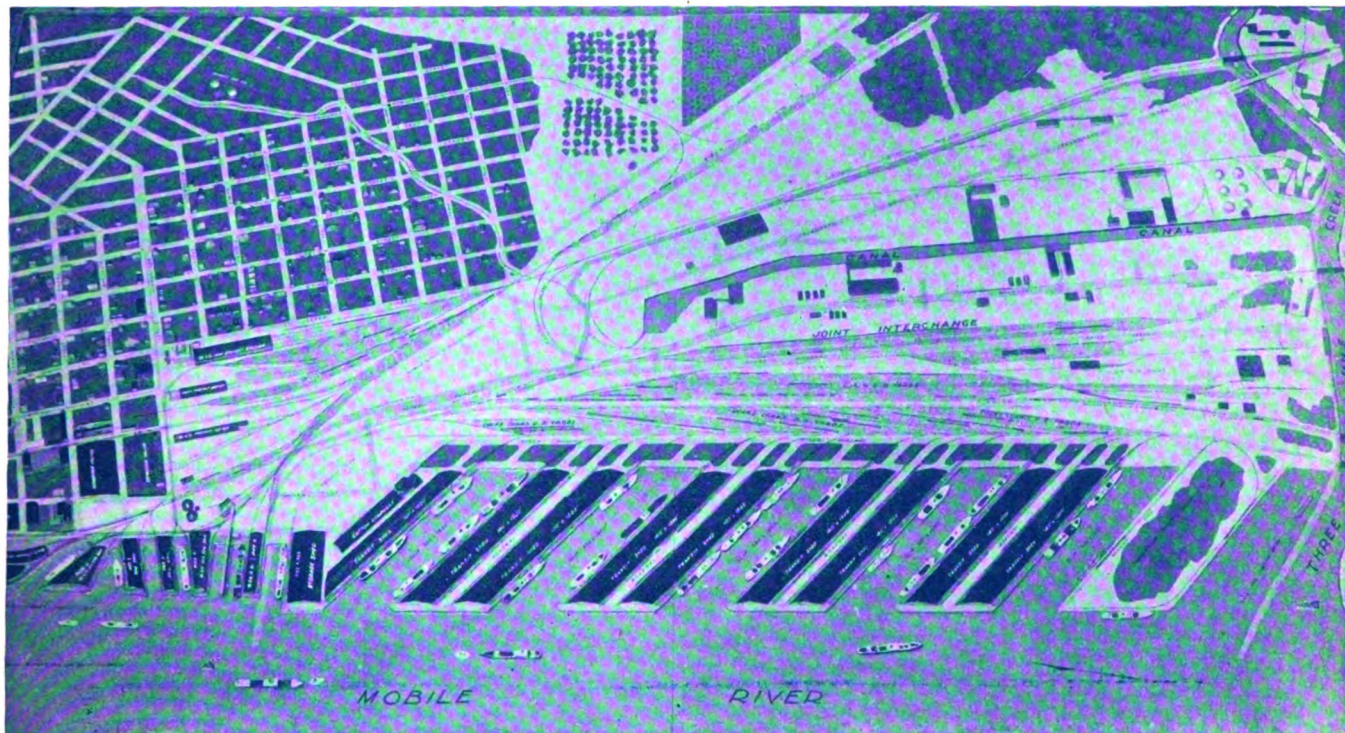
of oils reduces the amount of compounding, and the mixed oil, produces a weakened oil film, which may at any time result in the failure of the bearings.

Use Proper Lubricating Oil

We have described the emulsification of the oil in the wiper cups and the consequent stoppage of the oil leads. Since this is the only objection that can be held against the use of the engine oil in its pure condition, it is advisable to find other methods of preventing the emulsion than the mixing of the oil. Oil economy alone would be an incentive to this, because it is an established fact that the pure marine engine oil is usually far more economical than any of the oil mix-

Dock Management Progress Section

How Successful Dock Operators Have Met
Problems of Giving Best Service to Ships



A relief map made by students of Mobile high school showing the Alabama State docks as they will appear on the completion of the \$10,000,000 port project now well underway

Mobile Builds Terminal To Serve Shipping

BY DAVID HOLT

WITH admirable vision and courage the state of Alabama is carrying out an extraordinarily progressive and comprehensive port development plan at Mobile in order to more fully reap the benefit for its citizens of the exceptional natural advantages of this famous Southern city. Such wise leadership is indicative of the growing commercial importance of the South and the aliveness and initiative of its people. Funds have been authorized for the construction of an ocean terminal system not to exceed in cost \$10,000,000, and the work is now well along under the direction of the noted Panama canal engineer, Major General Sibert, retired, of the United States army.

Mobile's total water borne commerce for the calendar year 1925 was 2,901,794 tons, valued at \$130,450,408. Of this, the coastwise tonnage was 1,000,919; exports, 953,583; imports, 342,499, and inland waterways, 604,493 tons.

Interchange Between Ship and Rail

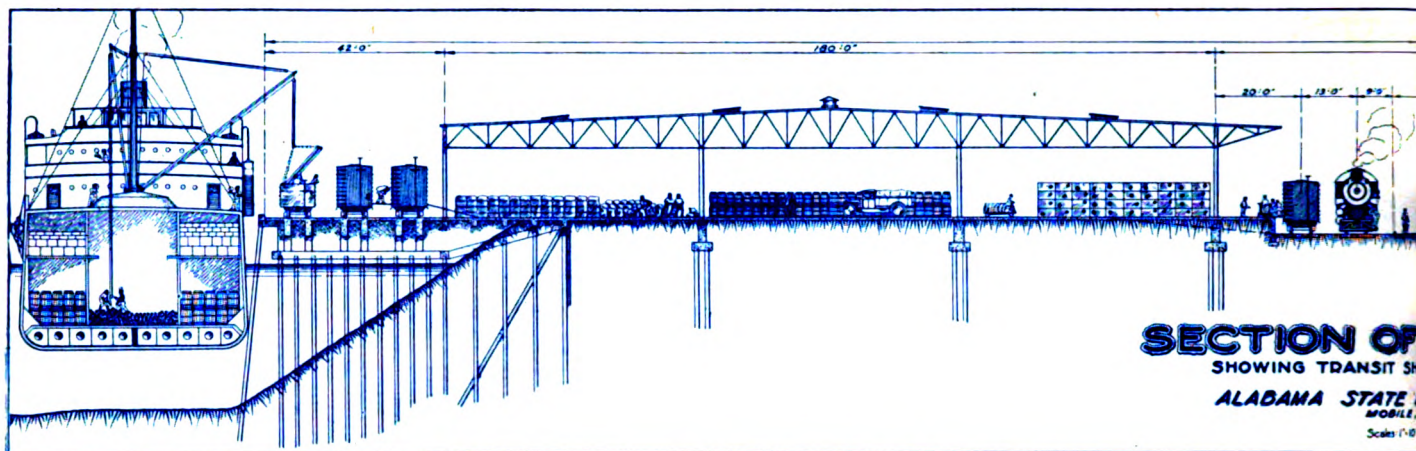
Lumber and timber, iron and steel products, shooks, headings and staves, coal, cotton, wheat and flour were the principal commodities exported, while the principal imports were black strap molasses, bananas, manganese ore, sodium nitrate and kainit. Detailed and comparative reports show an increase in volume, value and variety in Mobile's foreign and domestic commerce.

Interchange of freight between rail and water carriers is accomplished

over fifteen piers or wharves having shipside rail delivery; four of which are owned by the Mobile and Ohio Railroad Co., two by the Southern Railway Co., two by these two companies, jointly; one by the Louisville & Nashville Railroad Co., two by the Gulf, Mobile & Northern Railroad Co., three by the Turner Terminal Co. and one by the city of Mobile.

A coal and ore handling plant is operated by the Inland Waterways Corp. in connection with the Mississippi-Warrior Barge line, but this has no rail connection.

The total berthing space for vessels loading and discharging cargo is in excess of 15,000 lineal feet. Special facilities include a grain elevator of 225,000 bushels capacity, three banana



conveyors, derrick barges, plants for handling bunker and cargo coal and fuel oil; also for pumping and storing molasses. Vessels load directly to or from barges in midstream or at the wharves, or take lumber from rafts floated alongside. The city of Mobile owns and operates a wharf and steel transit shed 1500 feet in length, and there is abundant protected storage space at and near shipside, suitable for many purposes in connection with shipping.

Ample Ship Repair Facilities

Mobile claims first rank among the Gulf ports in the matter of facilities for ship building and repairs. The Alabama Dry Dock and Shipbuilding Co. operates six dry docks with capacities ranging from 200 tons to 10,000 tons; the Todd Shipbuilding and Dry Dock Co. Inc., has two dry docks of 10,000 tons capacity each. The Henderson Shipbuilding Co., Southern Dry Dock and Shipbuilding Co. and Murnan Shipbuilding Corp. operate one dock each and Harrison Brothers have roller ways for smaller vessels. There are also numerous plants where launches and power boats are built and repaired. The ship repair facilities bring many vessels to the port from other countries and other ports on the Gulf and South Atlantic.

Mobile harbor, five miles along Mobile river immediately above its entrance into Mobile bay, is connected with the Gulf of Mexico by a channel 33 miles long, 30 feet deep and 300 feet wide. It is a land-locked, fresh water harbor, having a mean tidal variation of 1.1 feet.

This brief description, together with what is known of the mild, semi-tropical climate, productive soil of surrounding fields, and numerous manufactures, gives a fair impression of the port of Mobile as it is today.

Forces are at work to double by 1928 the capacity of the port for han-

dling world commerce, to provide manufacturing sites at shipside and rail-side, and to let the world know about the advantages of Mobile.

As noted above the state of Alabama is now improving the port of Mobile by the construction of a terminal system to cost not exceeding \$10,000,000, to which amount the issuance of bonds under the credit of the state was authorized by the legislature and approved by the voters at a special election, for this purpose.

Power and authority to carry out the plan of seaport development by and for the state was given to the



J. L. BEDSOLE
President, Chamber of Commerce

state docks commission, created by act of the legislature. This board, composed of three members, is appointed by the governor, whose approval is necessary in the issuance of docks securities and certain other important phases of the work.

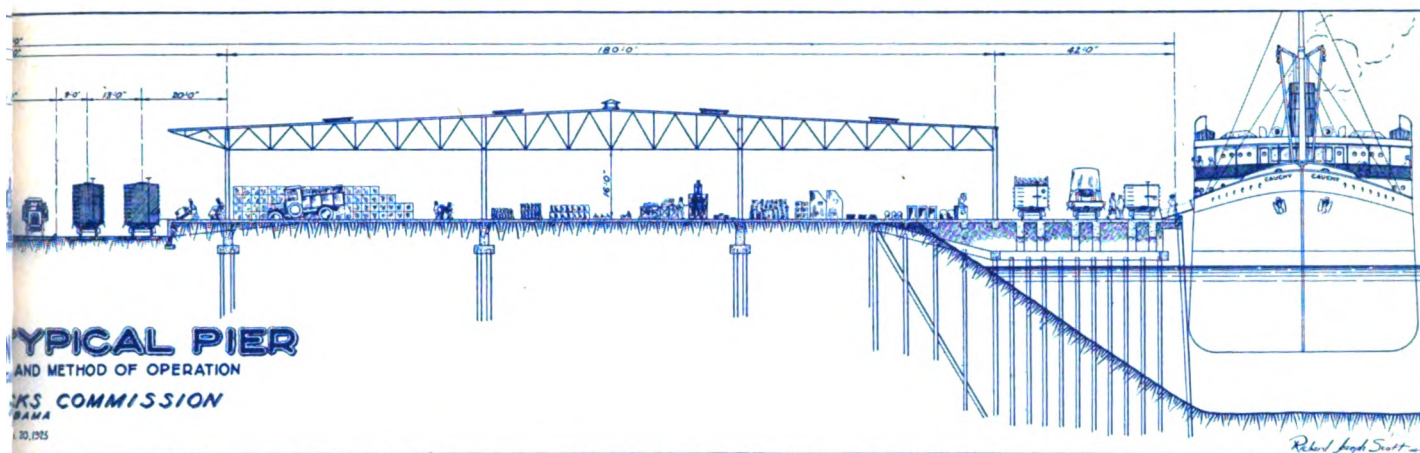
Recognition of the fact that production in Alabama and contiguous states

was increasing, and that other ports were getting trade that rightfully belonged to Mobile, by reason of its location and lines of transportation, led to the improvement of the Alabama seaport by the state, as an act of public necessity and good public policy. Mobile's facilities for the interchange of freight between railroads and ocean carriers were controlled by the municipality, the railroads, private corporations and the federalized Waterways corporation. None of these owners was prepared to bring about the physical developments that appeared necessary or to advertise Mobile's advantages as a shipping and manufacturing port.

The Alabama seaport enabling act was adopted and approved in September, 1923. The docks commission was finally organized several months later, by the appointment of Major Gen. William L. Sibert as chairman and chief engineer, with former Governor Charles Henderson, of Troy, Ala. and Frank G. Blair, of Tuscaloosa, Ala., as associate commissioner. One year after the passage of the act, General Sibert was able to report that the site for the port development had been selected and appraised for purchase, the general plan of construction had been completed, arrangements made for the removal of the Louisville & Nashville railroad's main line tracks back about 2000 feet further from Mobile river bank, and contracts made for the purchase of a large portion of the site from the various owners.

Site for Ocean Terminal

The site selected, 560 acres, lay between One-Mile creek and Three-Mile creek, with a frontage of 7000 feet on Mobile river, and extending westward to the right-of-way of the Southern railway. Though situated within the city limits, the tract remained practically unimproved and was largely covered with marsh grass and brush. This condition was due to the fact that the elevation was but



little above high tide levels and the area sometimes was covered by storm tides. Cut off from the river by a railroad and held by numerous owners, there was no special reason nor community of interests to stimulate its improvement. Under these conditions, it was possible for the state docks commission to obtain for the state all of the land needed for the present and future development of the port at a cost within the means of the commission.

Soundings showed that the site was underlain at varying levels with sand washed in from the sea or down with the rivers and that there was nothing in its composition to interfere with dredging operations or to make difficult the obtaining of firm foundations for heavy construction. Excavation over the entire area is accomplished with suction dredges. The sand and earth removed in excavating slips, canal and turning basin is used for filling in where elevation is required. This matter would have to be disposed of, in any event, and the cost of elevating the land is more than counterbalanced by the low cost of excavation.

In order to utilize the entire river front of the property, as well as to provide navigation through its entire length, One-Mile creek was moved, bodily and its waters diverted into Three-Mile creek by way of a canal. The old bed of the creek has been filled and put to other uses.

Terminal Railway in Operation

There was an old railroad track, built partly for war time purposes, extending from a point five miles north of Mobile, crossing Three-Mile creek with a drawbridge, and extending through the docks site. This was purchased by the commission, improved and placed in service. It is used to facilitate the hauling of material brought by the several railroads with which it is connected, and is known as

Terminal railway, Alabama state docks, a common carrier, connecting all rail lines that now or may hereafter enter Mobile with the state's joint interchange tracks and the docks; having its own switch engines and other equipment.

The problem of the docks commission not only involved the creation of terminals for the storage and interchange of freight, but also that of protection for vessels and cargo in time of storm. The pier and slip system of dock construction was early decided upon and a careful study was made to ascertain the highest levels ever reached by hurricane tides at

into consideration, and the slips made wide enough to permit vessels to load from or into boats or barges while laying at the wharf, and to permit the free passage of such boats or barges.

A. C. Davis, designing engineer, Alabama state docks commission, has furnished this general description of the manner in which the commission plans to meet its shipside problems:

General Description of Plans

The Alabama docks under construction will consist of a series of slips with filled piers between. The depth of the slips will be 35 feet from low water, the width 350 feet and the length 1600 feet. This length allows three large cargo steamers to berth on each side of the slip. The slips are given an angle to get as much length as possible, to make it easy to bring tracks into the piers and to facilitate the entrance and exit of ships. The current in the river will cause all ships to come out of the slips stern downstream, irrespective of angle of slip.

The standard pier will be about 560 feet wide. On each side there will be an apron 42 feet wide, back of which a shed 180 feet wide will be placed. A typical cross section is shown at top of pages 36 and 37. There will be three tracks on the apron and two depressed tracks back of the rear platform. The rear platform will be about 14 feet wide, the intent being to provide a platform to work the cars without the necessity of spotting them in front of a door as would be required if the platform were omitted. A canopy will be provided over this platform to allow uninterrupted loading or unloading of cars. Along the middle of the pier a vehicle roadway will run with ramps at various points to provide access to the sheds without the necessity of maintaining an open passageway the length of the sheds.

Of the three tracks on the apron, the front track will allow the hand-



WILLIAM L. SIBERT
Major General United States Army Retired

that point, and all tracks and floors are to be constructed at least two feet above the highest of the high-water marks.

Mobile receives a portion of its freight from the interior by way of the Mississippi-Warrior Barge line of the Inland Waterways Corp. and other river carriers. This fact was taken

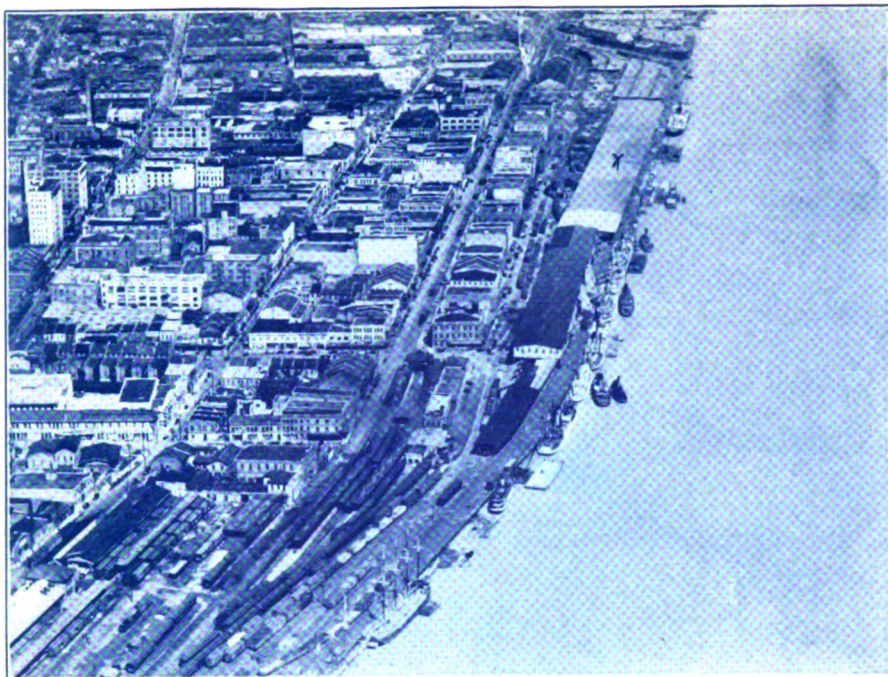


Photo by Aerial Photographic Service Inc., Chicago.

MOBILE WATERFRONT, NORTH OF THE LOUISVILLE & NASHVILLE DEPOT. THE NEW STATE DOCKS ARE BEING BUILT IMMEDIATELY ABOVE THE IMPROVEMENTS SHOWN. THE LONG COVERED STRUCTURE IN THE BACKGROUND MARKED X IS THE 1500-FOOT STEEL AND CONCRETE TRANSIT SHED OF THE MUNICIPAL WHARF

ling of material with the ship's tackle to or from an open-top car, the second track will permit the handling of material to or from box cars, and the third track will be a passing track to allow switching to the last berth without stopping work on a ship in the first or second berths. This arrangement, while providing more ship-side tracks than usual, is necessitated by the large amount of iron, steel and timber products shipped through this

port, which can most advantageously be handled from car to ship, thus materially reducing the handling costs. The rails for the tracks will be put in slots with the top of the rail flush with the deck. The slot will be filled except for the flange groove, in order to provide a smooth surface for hand trucking.

The apron will be constructed of reinforced concrete and will be supported on concrete piles. The pile

bents will be put on 20 feet between centers and the beams under the rails as well as the floorbeams will be of reinforced concrete.

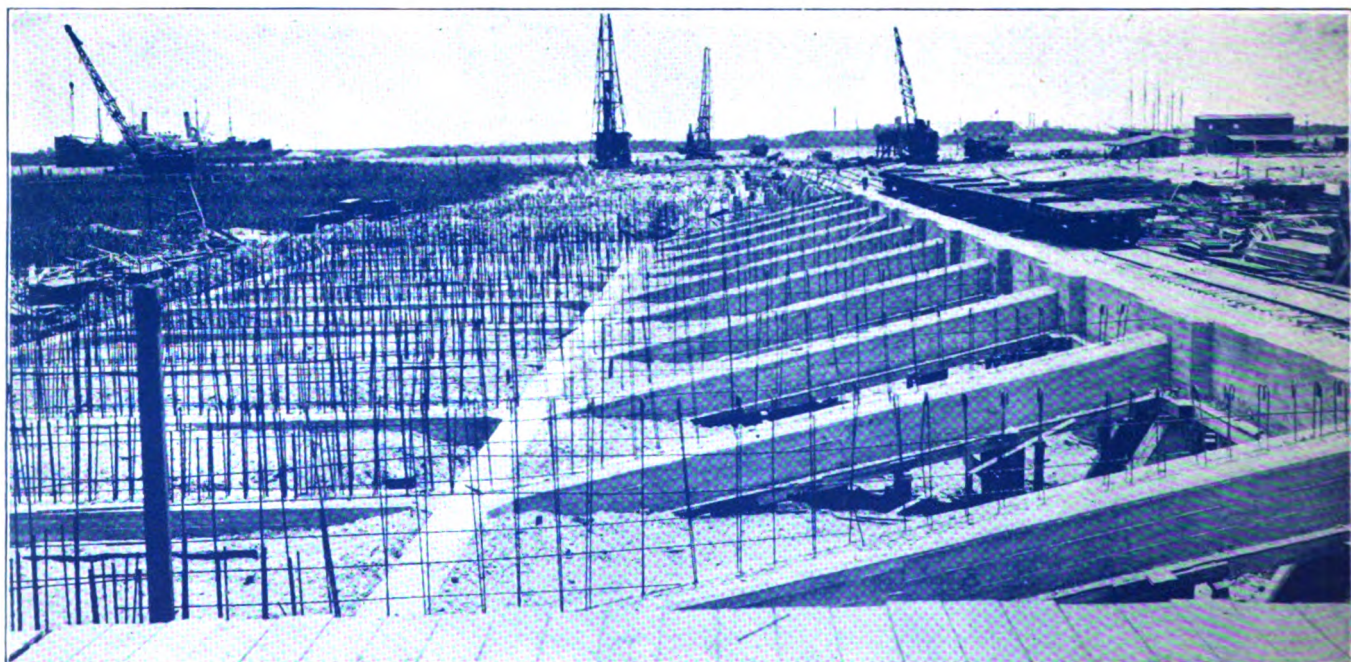
The apron structure will be 70 feet wide extending partly under the shed, that part under the shed being designed for a live-load of 300 pounds per square foot. At the rear of the apron a laminated creosoted sheet-piling bulkhead will extend down to a stratum of hard sand.

Pier Shed Is Spacious

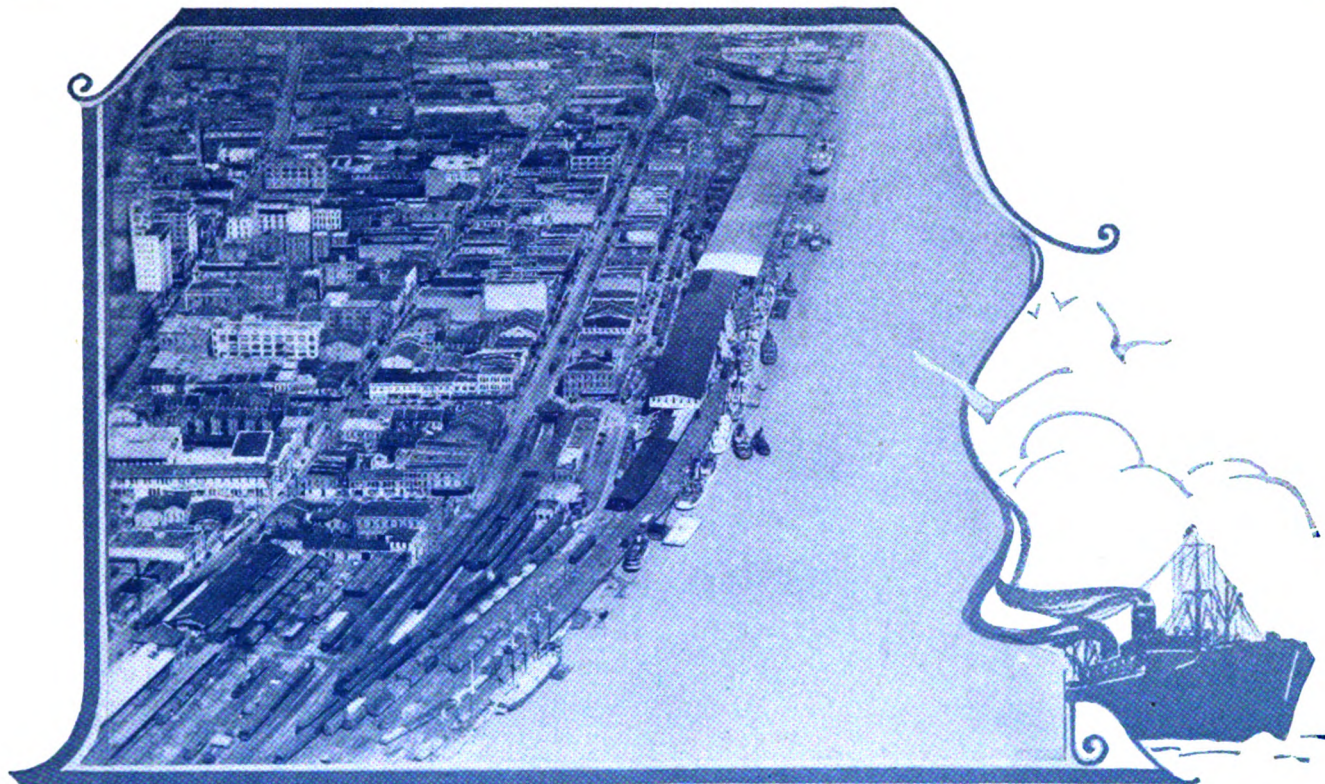
The standard width of shed adopted is 180 feet. This width allows, should future demands require it, the assembling on one floor of a full cargo before arrival of the ship, or allows the unloading of a full cargo without the delay incident to loading on cars or trucks. Only about 25 per cent of the cargo of outgoing ships is now of such a character as to be unloaded in a transit shed, and until conditions change, 120 feet of the transit shed will be used as shipside warehouses. Should the transit shed demands call for more of this space, other warehouses will be built.

The sheds will be of structural steel with corrugated sides. The steel trusses will be built for a span of 60 feet and will be placed on 20-foot centers. Rolling steel doors 20 feet wide by 12 feet high will be placed in alternate bays on both the front and the rear of the sheds.

In order to reduce the fire hazard, concrete fire walls will be provided to divide the shed into sections. A row of hydrants will run down the middle of each pier and standpipes with hose



SHOWING PROGRESS OF PIER NO. 2 OF THE ALABAMA STATE DOCKS AT MOBILE. THE CONCRETE PILES CAPPED WITH CONCRETE ARE READY FOR CONCRETE WALLS AND FLOORS. PHOTOGRAPH WAS TAKEN JUNE 1, 1926



Air View Showing Portion of the Busy Harbor at

Mobile Alabama

Because of the ever increasing number of industries seeking locations in the South and outlets through Southern seaports, the State of Alabama is building \$10,000,-000 dock terminal facilities at Mobile to take care of the rapidly growing business of the port.

When the new docks are completed to augment the present splendid system, Mobile will be one of the most modernly equipped seaports in the world, with facilities for properly handling every class of commodity with the quickest possible dispatch.

On the State Docks site 350 acres of high land with rail, ship and inland waterway facilities is available to tonnage producing industries on very liberal terms. Mobile invites Manufacturers to carefully investigate this proposition, as well as the many other maritime and commercial opportunities at the port of Mobile. A cooperative welcome awaits you.

Write

Board of Commissioners City of Mobile, Alabama

G. E. Crawford, Mayor

H. T. Hartwell, Commr.

Please mention MARINE REVIEW when writing to Advertisers

will be provided along the front of the sheds arranged to protect either the wharf or the shed.

Floor Levels Above Floods

The sheds will have a floor of reinforced concrete, 6 inches thick, resting directly on the fill. It will be laid with a grade of 0.5 sloping both ways from the middle of the shed.

The foundation conditions are such that piles are required under all heavy loads. Below a depth of 10 or 12 feet

be provided a landing for tugs and small boats. This will all be constructed of creosoted materials.

To give good railroad connections, there will be a joint interchange yard, with every railroad entering Mobile having tracks therein. This will be used for interchange of cars between railroads as well as between docks and railroads. A Mobile & Ohio switch engine, for instance, can bring into this yard all cars for the docks and the other railroads and place such

The warehouse will have five storage compartments, each 150 feet by 160 feet; a receiving shed 50 feet wide running the length of the warehouse; a passage way 30 feet wide by 800 feet long; a compress room 60 feet wide by 180 feet long; and rooms for boilers and shop. The storage capacity of the warehouse is 25,000 bales of compressed cotton in compartments exclusive of that in the compress room or receiving shed.

Immediately back of the receiving shed will be two railroad tracks for receiving cotton by rail while at the end of the receiving shed provision will be made for receiving wagon cotton. The warehouse will be located immediately back of a 120-foot transit shed on pier No. 1, which will bring the cotton within stevedoring distance of the ships. This location of the warehouse allows cotton to be received by barge or river boat, delivered to the warehouse, compressed and reshipped on ocean going vessels with minimum handling.

The walls of the warehouse are of reinforced concrete, the roof of corrugated iron, the floors of reinforced concrete resting on sand fill, the doors through the fire walls, in general, of the rolling steel type and the entire building is protected by automatic sprinklers.

There will be installed a Webb high density compress of the latest type and such other auxiliaries as may be required to make a complete and modern installation.

Progress of Construction

The Louisville & Nashville railroad began permanent operation over its new line through the Alabama state docks site on Feb. 13, 1926, and on the same date the contractors were notified to begin actual construction of pier No. 1, the first work for which contracts had been let by the state docks commission.

Concrete piles, 40 to 60 feet long, had been cast, and the driving of these was nearing completion on July 1. More than 300 lineal feet of concrete apron had already been completed on that date. The masonry will be completed about Oct. 1. Doullut and Ewin, of New Orleans are the contractors.

Work on the construction of the cotton warehouse is well under way. Concrete foundations for the compress have been completed and the walls of the warehouse are going up rapidly. Some storage space therein will be available by the time cotton begins to move, on or before Sept. 1.

The site of the cotton warehouse is just back of pier No. 1. The original



Photo by McGill Studio, Mobile

ROYAL STREET, MOBILE, FROM THE CORNER OF CONTI STREET

the underlying material is sand. The column footings will be of concrete down to the permanent water level carried on untreated wood piles.

The range of tide at this point is only about 1½ feet, but in times of great storms the water level has been known to rise 9 feet. The piers will, therefore, be placed at an elevation of plus 11 feet, which is well above the highest water from storms, in order to protect cargo that would be damaged by water.

The ends of the slips will have a bulkhead wall in front of which will

cars on a receiving track of any particular carrier. When ready to return to its own yard, it will find on its own receiving track all cars from the docks and other railroads. This interchange yard puts all railroads on an equal basis in handling freight to and from the docks.

A Large Cotton Warehouse

There is under construction a class "A" cotton warehouse, 900 feet long by 230 feet wide, which will be the first unit of the Alabama state docks placed in actual use.

Export through **Mobile** Alabama

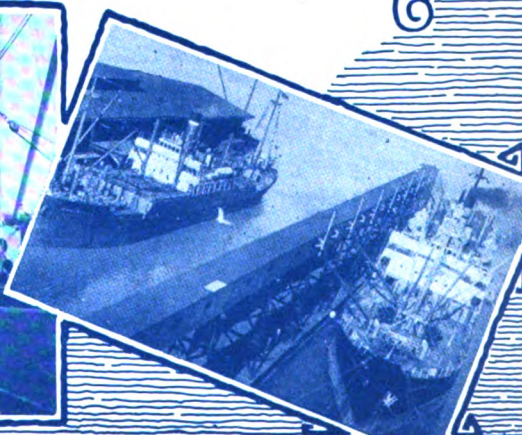
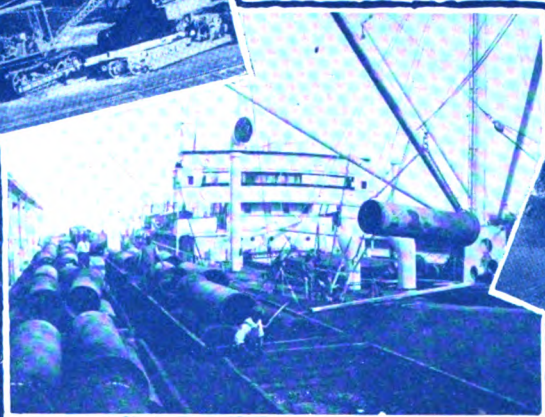
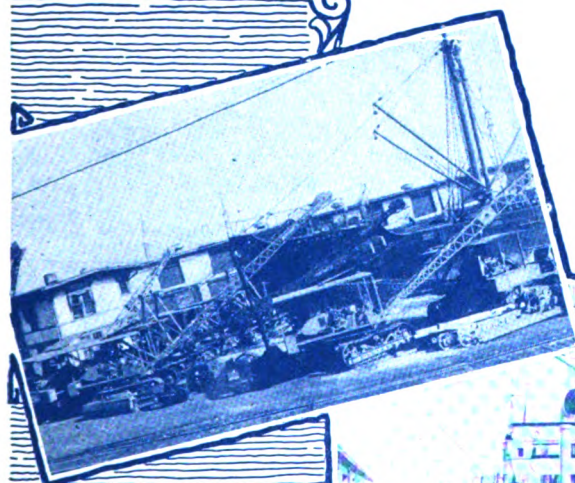
—a world port equipped to handle every commodity with dispatch—an industrial seaport where millions are being spent on harbor improvements—where factory sites with rail and shipside facilities are available on very low terms.

WE INVITE THE CAREFUL INVESTIGATION OF INDUSTRIES DESIRING TO LOCATE A PLANT IN A GROWING SEAPORT

For complete information
write

Mobile Chamber of Commerce
MOBILE, ALABAMA

There is no Inheritance or State Income Tax in Alabama



Please mention MARINE REVIEW when writing to Advertisers

intention had been to complete pier No. 1 before construction of this warehouse was begun, but this plan was changed to meet the immediate needs of cotton merchants and others desiring to move the staple through the port of Mobile during the season of 1926-27.

W. Horace Williams, Inc., of New Orleans, has the contract for the

throwing up a fill from Chickasaw creek to One-Mile creek, a distance of about three miles, and the construction of a drawbridge on concrete piers across Three-Mile creek. The fill was made by the use of suction dredges and Three-Mile creek was straightened by the same means. In the process of dredging and filling large areas of the docks site have been covered

record shows that the work of this machine has been effective in the highest degree. General Sibert employed dredges of the same type in his work on the Panama canal with similar success.

New railroad connections and traffic arrangements affecting the port of Mobile have recently been effected.

President T. C. Powell, of the Chicago & Eastern Illinois railroad, has notified General Sibert, as head of the Alabama state docks commission, that the Chicago & Eastern Illinois has established through working arrangements to Mobile with the Mobile & Ohio railroad through both East St. Louis and Tamms, Ill., in addition to similar connections already in force via the Louisville & Nashville railroad and the Southern railway.

President J. M. Kurn, of the Frisco lines, has announced that the Frisco will make Mobile one of its Gulf Ports. The new line of the Frisco will cross the Alabama, Tennessee & Northern railroad at Aliceville, Ala., which, with the Southern railway from Calvert, offers an open route for this line to Mobile.

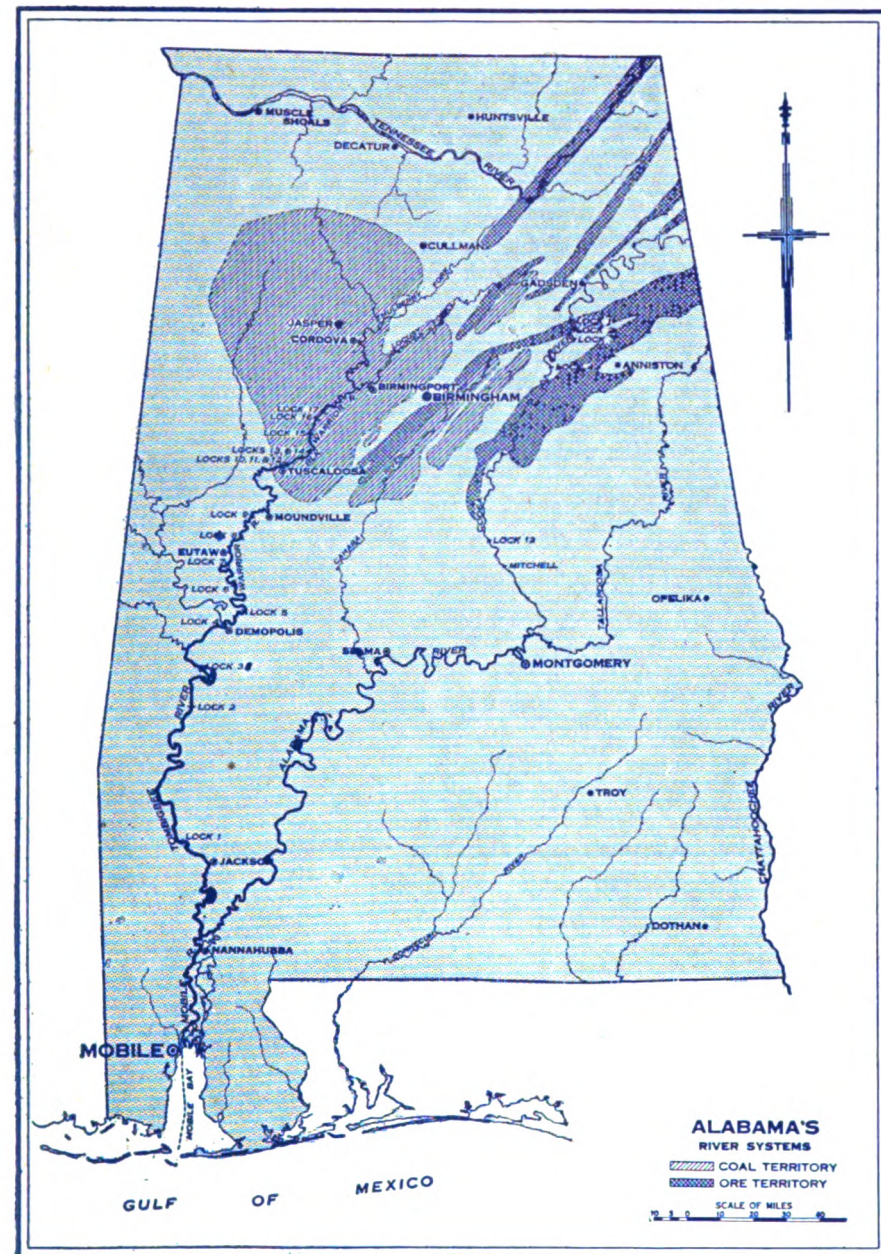
General Facts About Mobile

It has also been officially announced that while application of the Gulf, Mobile & Northern railroad for acquisition of control of the Jackson and Eastern railway and of trackage rights over the Nashville, Chattanooga & St. Louis from Jackson, Tenn. to Paducah, Ky., are pending before the interstate commerce commission, preparations are going forward for the connection of the Gulf, Mobile & Northern with the Chicago, Burlington & Quincy, which will make Mobile an outlet of the Burlington route.

It should be stated as a matter of just credit due, that the railroads and individual owners of land embraced in the state docks site sold their holdings to the state, almost without exception, at prices fixed by the board of appraisers appointed by the governor, at prices which were based on the value at which the several parcels of land were assessed for purposes of taxation.

Mobile's present population, including immediate suburbs, is approximately 100,000. The latest annual report of the city health department shows that the birth rate per 1000 of the white population for the calendar year 1925 was 19.88, while the death rate per 1000 among resident whites was 9.77. This is a good showing, but a slow method of doubling a modern city's population.

The Mobile chamber of commerce, co-operating with the Alabama state



foundation, floors and walls of the cotton warehouse. Decatur Cornice & Roofing Co., Albany, Ala., has the contract for the structural steel and the roof. Poe Piping & Heating Co., Greenville, S. C., has the contract for a sprinkler system. Webb Press Co., Minden, La., will supply the compress and boilers, and the Cox Electric Co., Mobile, Ala., will do the electric work.

The moving of the Louisville & Nashville railroad track involved

with sand and its marshy aspect is rapidly disappearing.

The Suction Dredge Alabama

One of the first moves of the state docks commission after the selection of the site for improvement was to build the ALABAMA, a modern 20-inch pipe line dredge, with steel hull and first-class equipment. The ALABAMA was built by Ellicott Machine Corp., Baltimore, and was towed to Mobile. The

Nothing to write home about



Photo—Rosenfeld

The junk Amoy sailed across the Pacific, coasted down and through the Panama Canal, and up to New York without a pump.

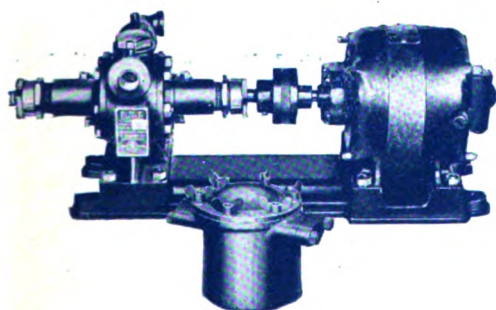
That she made such a voyage entitles her to undying fame; but the fact that she made it without a pump is not unusual.

Most small boats have a galvanized pipe with a plunger and valve or a fancy little brass affair of small capacity—both of which demand an exhausting outlay of energy to pump a small amount of water. In the event of a leak at sea they would be of no more avail than the rags and dishpans of the Amoy.

The AMF power pump is a real pump capable of handling a large volume of water in either the ship or the small boat—a dependable weapon to fight a serious leak. It is also ideal for fighting fires and for the routine work of pumping bilge, and for galley, toilet, and bathroom service.

The AMF pump comes equipped with electric motor or gas engine drive, or it may be belt-driven from a marine motor. Write for descriptive bulletins.

We also build hand pumps and Automatic Water Systems.



DISTRIBUTORS

Boston, Mass., Walter E. Moreton Corp.,
1043-45 Commonwealth Avenue

New York, N. Y., Bruns-Kimball & Co.,
50-54 West 17th Street

Philadelphia, Pa., Marine Equipment & Supply Co.,
116 Walnut Street

San Francisco, Calif., Ets-Hokin & Galvan,
181 Steuart Street

Wilmington, Calif., Ets-Hokin & Galvan,
240 Canal Avenue

Canada—General Supply Company of Canada, Ltd.
356-60 Sparks Street, Ottawa

**American Machine
& Foundry Company**
5520 Second Ave., Brooklyn, N. Y.

Please mention MARINE REVIEW when writing to Advertisers

docks commission and other constructive agencies in city, state and contiguous trade territory having community of interests, will seek to double the population by increasing opportunities for a livelihood at the Alabama seaport.

As a great first step in this important direction, President J. L. Bedsole, of the Mobile chamber of commerce, has proposed as the major activity for the new fiscal year a complete survey of all factors entering into and definitely affecting the commerce of this city and those trading points at home and abroad with which Mobile has, or seeks, business contact. His plan has been adopted.

The task of committees now at work is that of consolidating and making fully effective all that the chamber of commerce and its co-workers for Mobile heretofore have achieved: The building of the port terminals, deepening the channel to the sea, canalization of the rivers, construction of

the bridge across Mobile bay; all these, and more, have been accomplished, or are on the way to accomplishment. To obtain full benefit from these improvements is the big job.

Manufacturing sites are offered for lease on portions of the state docks property not soon to be required for improvement.

Hydro-electrical power from Muscle Shoals and the plants on the Coosa and Tallapoosa rivers will soon reach Mobile over high tension transmission lines which will be completed in September, or sooner.

Water borne raw materials for manufacture can be cheaply assembled from the mineral districts of Alabama, the salt, sulphur and oil fields of Texas and Louisiana, the phosphate beds of Florida and the nitrate mines of Chile.

To bring such practical advantages together in the form of tangible, workable and financiaible entities is the goal toward which all good Mobilians are working with energy and eagerness.

March number of **MARINE REVIEW** a complete and illustrated account was given of the bracketless system of construction.

June Lake Levels

The United States Lake Survey reports the monthly mean stages of the Great Lakes for the month of June, 1925, as follows:

| Lakes | Feet above mean sea level |
|----------------------|---------------------------|
| Superior | 600.50 |
| Michigan-Huron | 578.41 |
| St. Clair | 573.79 |
| Erie | 571.22 |
| Ontario | 245.31 |

Lake Superior is 0.32 foot higher than in May and it is 0.72 foot lower than the low June stage of a year ago. Lakes Michigan-Huron are 0.27 foot higher than in May and they are 0.05 foot lower than the low June stage of a year ago. Lake Erie is 0.05-foot higher than in May and it is 0.04-foot higher than the low June stage of a year ago. Lake Ontario is 0.06 foot lower than in May and it is 0.11 foot lower than the June stage of a year ago, 1.32 feet below the average stage of June of the last ten years.

Orders Received

The Haskellite Mfg. Corp. Chicago, has received a number of orders for its products for use on ship board among which is the roof panels in deck houses and cabins of an 83-foot cruiser building for W. C. Rands, at the Defoe Boat Works, Bay City, Mich., and panels for hulls of the Merchants and Miners vessels building at Newport News Shipbuilding & Drydock Co. Wall and door panels in writing and smoking room for the same ships and for bookcase and gun lockers on the yacht ROBERT LAW will also be of this material. Haskellite and plymetl has been ordered for the two ferryboats for the Key system Oakland, Calif., by the Moore Drydock Co. The ferry FISHERS ISLAND building at Wilmington, Del. by the Bethlehem Shipbuilding Corp. will also use this material. State room partitions, passage way bulkheads and built-in lockers and ends in deck houses of the three boats under conversion to diesel at the Fore River plant of the Bethlehem Shipbuilding Corp. will also be built of Haskellite products.

Settlement was approved by the shipping board in the amount of \$65,000, as payment to the owners of the S. S. WOODFIELD in collision with the shipping board steamer DANVILLE May 6, 1921.

Bracketless System Tanker

Completes Successful Trial Trip

THE first tanker to be constructed on the new bracketless system of construction devised by Sir Joseph Isherwood and named BRITISH INVENTOR in his honor, successfully completed her trial trip on July 8. This, likely to be epoch making tanker was built by Palmers Shipbuilding and Iron Co., Jarrow & Hebburn on Tyne, England, for the British tankers Ltd., London. Her length is 430 feet, the breadth is 58 feet and the depth is 34 feet 3 inches. She has a dead-weight capacity of 10,700 tons on 26 feet 6 inches draft and is classed in Lloyds 100 A 1.

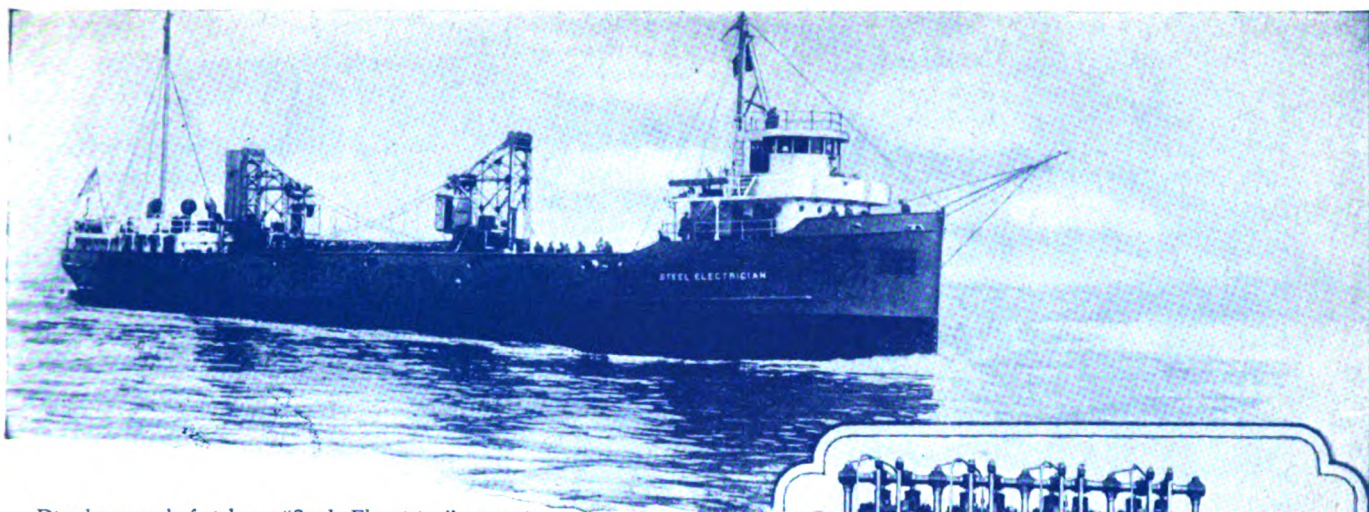
Machinery is located aft and consists of one triple expansion steam engine with cylinders 28 x 46 x 76 inches in diameter and 51 inches stroke. There are three oil burning boilers of scotch type 15 feet 6 inches in diameter by 12 feet in length. The total heating surface is 8250 square feet and the working pressure is 180 pounds per square inch.

Ample auxiliaries have been fitted to meet the owner's special requirements of a 10-inch oil pipe line of double all-around system. There are two large horizontal duplex brass-fitted oil pumps, 12 x 10 1/4 x 10 inches each to discharge 150 tons per

hour. Also one extra large pump 20 x 14 x 18 inches to discharge 250 tons per hour. Besides the above there is a small ballast pump and an oil fuel transfer pump.

A speed of 11 knots was attained, fully loaded, on the trial trip. In reports received from the trial of this vessel it is stated that the bracketless system of construction has absolutely eliminated vibration even when going full speed astern. Deflection measurements taken during this trial are believed to be less than ever attained in a similar vessel. One dry tank carefully examined after the trial was found in perfect condition. It would seem from this trial, therefore, that this method of construction so lately initiated by Sir Joseph Isherwood has demonstrated in practice what the inventor and other experts considered might reasonably be expected.

The BRITISH INVENTOR directly after the trial, was taken over by the owners and sailed on her maiden voyage for the East. It will be interesting to receive further reports of the performance of this vessel on account of the application to its construction for the first time of this new system of construction. In the



Diesel-powered freighter, "Steel Electrician" operating between Great Lakes ports and Montreal. Length overall 258'; Beam Molded 42'-9"; Depth Molded 20'; Draft (Lake Service) 14'; Deadweight Tons 2077; Speed 8.6 Knots. Powered with three 300 B. H. P. Nelseco Diesel Engines—Type 4 MI-22.

A trial trip that was never completed

IT ISN'T often that the trial trip of a new vessel is turned into a cargo carrying trip. But that is what happened to the freighter, "Steel Electrician", which was launched recently by the Federal Shipbuilding and Dry Dock Company, Kearny, N. J.

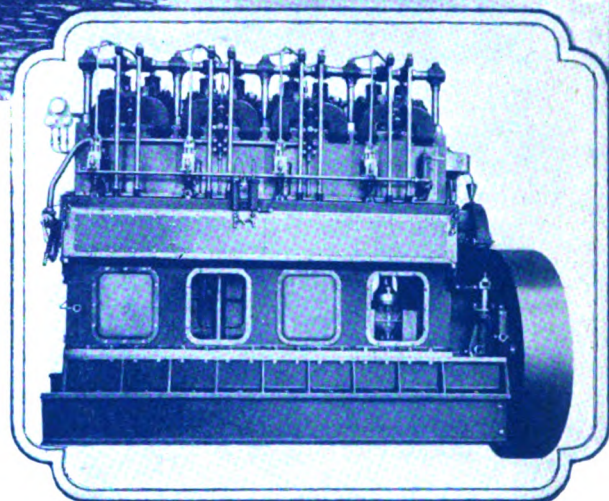
So successful were the preliminary tests that the owners decided to cancel further trials and to head the vessel for Philadelphia to pick up a cargo of sugar.

This vessel, owned by the U. S. Steel Products Company—a subsidiary of the U. S. Steel Corporation, is a Diesel-electric drive freighter powered with three 300 B. H. P. Nelseco Diesel Engines—Type 4 MI-22. These dependable power units operate motor generators at a speed of 225 R. P. M.

All of the engine room equipment and deck machinery of this vessel are electrically driven.

Nelseco engineers will be glad to tell you about other interesting Nelseco Diesel installations. In writing ask for Pamphlet MR, which describes the latest types of Nelseco Diesel Engines.

NEW LONDON SHIP & ENGINE COMPANY
Groton, Conn., U. S. A.



Nelseco Diesels are built under M. A. N. patents; in 4-cycle, single-acting type, from 100 to 850 H. P.; in 2-cycle, double-acting type, from 1,000 to 10,000 H. P.; mechanical or air injection; suitable for direct current, alternating current, rope, belt or direct drive.

A 180 H. P. Nelseco Diesel is conveniently placed for your examination at our sales office.

PORT ELCO

247 Park Ave., New York, N. Y.
Demonstrations made on appointment

NELSECO

Original licensees from and collaborators with M. A. N. since 1910

Please mention MARINE REVIEW when writing to Advertisers

American Vessels

(Continued from Page 20)

of the Dollar Steamship line is nothing more than the result of years of continual advancement on the part of ocean transportation between America and the Orient.

It has ever been the duty of the owners of ocean craft to open up and maintain trade routes in order that international commerce may be advanced, and so by accomplishing this end, increase their cargoes. Oriental trade is now coming into the foreground in connection with the United States and the exporter who is engaged in this trade is finding that

service, it is also interesting to note how world travel has been increased during the last year and a half by the convenient operation of the round the world President liners of the Dollar Steamship line.

Until this service was started world travel had always presented innumerable problems to the tourist who did not wish to travel according to the set itineraries of personally conducted tours. Most of these tours are made in the winter and it is not always convenient for a business man to take his vacation with his family during that season. Being aware of these drawbacks to world travel on a large scale the Dollar line decided

pore and Penang, Malay; Colombo, Ceylon; Suez, Port Said, and Alexandria. Egypt; Naples and Genoa, Italy; Marseilles, France; Boston; New York; Havana, Cuba; Colon; Panama; and Los Angeles. One hundred and ten days are required to complete a circuit of the globe via this route. Due to the fact that it is eternally summer in the tropics the business man can plan to enjoy this tour with his family at a time of the year which best fits in with his usual vacation period.

An entirely different type of service is required to meet the needs of transpacific passengers, for the reason that while passenger travel between America and the Orient is composed of many tourists there are nevertheless thousands of people who are constantly crossing the wide stretch of ocean for business reasons. A fast and efficient service is the first consideration with people of the latter class; business men and merchandise are two things which will not brook delay.

The transpacific President liners of the Dollar fleet are so constructed as to satisfy the most exacting traveler. These vessels are slightly larger than the round the world fleet and are capable of making the Pacific run in record time. Both fleets were built by the government after the wartime emergency and therefore represent the most modern improvements in marine construction.

The vessels of the round the world fleet are of 20,610 tons displacement. All staterooms enjoy outside exposure and are equipped with running hot and cold water electric fans, beds, dressing tables and other first class furnishings. One hundred persons can be accommodated on each of these vessels.

Building Up Trade

The Dollar transpacific President liners are known as the 535-footers by reason of their length. They too are sister ships and have a displacement of 21,167 tons. No inside staterooms are to be found on these ships and the public rooms, wide promenade decks and other recreation facilities place them on a par with the finest afloat and America may well be proud that these vessels carry the stars and stripes.

A Dollar liner sails every Saturday at 4 o'clock. All go to Oriental ports. On alternate Saturdays a vessel departs for round the world. America is being well served by these ships and foreign trade, which has been dependent since the beginning on ocean transportation, cannot help



LEFT TO RIGHT—E. R. ECKMAN, J. HARRY PHILBIN, CAPT. I. JONES, CAPT. ROBERT DOLLAR, FRANK W. KELYEA AND E. S. FITCH ON THE S. S. PRESIDENT LINCOLN

American ship owners are able to provide him with unequalled service.

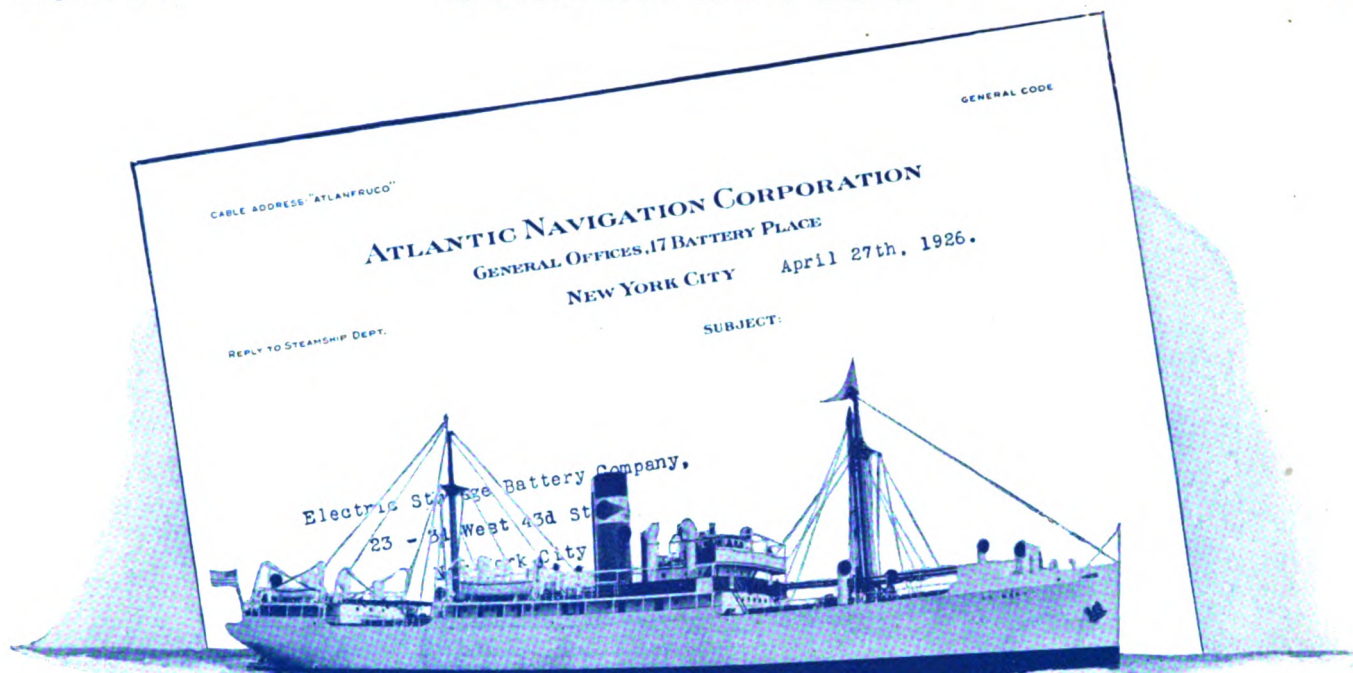
The round the world service of the Dollar Steamship line was the first of its kind ever instituted. It is needless to say that the risk and daring of such an undertaking had prevented other nations, let alone a private organization, from attempting to lay the foundation for so long a route. Stanley Dollar made no comment at the time he inaugurated this service, and even now, after two years and a half of steady increase he remains silent. His father, however, is less taciturn and will tell you that, "By keeping everlastingly at it and giving the American people the best, we find that we are able to maintain our service in a manner befitting the traditions of American business ability and organization."

Though this article has so far been confined to the benefits which are accruing in the Oriental trade as a result of fast and dependable marine

to issue its tickets with liberal stop-over privileges at whatever ports of call the individual tourist wished to visit. The fortnightly sailings of the vessels of its world fleet from 21 ports is convenient for those who are limited for time. All uncertainty in the mind of the tourist as to the type of accommodation to be expected, in the event that stop-overs necessitated a change of steamers, is obviated by the uniform construction of the seven sister ships.

Convenient for Travelers

These features of operation, coupled with the modern type of accommodation offered, has made the service very popular and people who thought of a visit to Europe only in terms of an Atlantic crossing are now going via the Orient. The ports of call for these liners after they sail from San Francisco are as follows: Honolulu, Kobe, Japan; Shanghai and Hong Kong, China; Manila; Singa-



The S. S. St. Mary, one of the steamers of the Atlantic Navigation Corporation that carry Exide Marine Radio Batteries.

“... long and satisfactory service”

*That is what Exide Marine Radio Batteries
give the Atlantic Navigation Corporation*

THE Atlantic Navigation Corporation's steamers run from New York to the tropics. This means that in winter the storage batteries for emergency radio service are subjected to tremendous climatic changes every trip. How the Exide Batteries on these vessels have stood up under such severe conditions is told in a letter dated April 27, 1926.

This letter says: "We are pleased to report that the Exide Batteries installed on our steamers for emergency radio service have given us long and satisfactory service."

As a matter of fact, the first Exides to be installed gave such steady, dependable service that when a battery of another make had to be replaced recently, an

Exide took its place. And this Exide, like the others, is standing its watch atop the deck-house, winter and summer, always ready to supply current in an emergency.

You will find Exide Marine Radio Batteries on the vessels of many large steamship lines. They are there for two reasons: their reliability and their long life. Many of these Exide Batteries have been in service for eight or ten years, yet they are still in perfect condition and pass inspections every trip.

It will pay you to investigate Exide Marine Radio Batteries thoroughly. We shall be glad to have a representative call and give you full information if you will write us. You will be under no obligation.

Exide

BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia

Exide Batteries of Canada, Limited, 153 Dufferin Street, Toronto

Please mention MARINE REVIEW when writing to Advertisers

but be greatly stimulated.

Production in America is forcing the manufacturer to either curtail his output or go after additional business in foreign markets. The whole of the Far East with its teeming population is awakening to the fact that modern methods of living are superior to the old order of things. Changes are occurring with startling rapidity throughout the Orient and America with such splendid merchant fleets at her disposal, was never in a better position than now to sell her products in the markets over beyond the sunset.

Negotiations Terminated for White Star Sale

The plan of the International Mercantile Marine to dispose of the White Star fleet to Furness, Withy & Co. Ltd., London, for approximately \$35,000,000 has fallen through, according to cable advices July 17 from Morgan, Grenfell & Co. and P. A. S.

Franklin, president of International, to John H. Thomas, vice president. The announcement came as a surprise in that it was believed in marine circles that the negotiations lacked only a few details to bring them to completion.

Shipping men expressed not only amazement, but also fear that Mr. Franklin's hope of divesting himself of all foreign affiliations to clear the way for the establishment of an all-American shipping company have received a setback. It was common report that Mr. Franklin was anxious to acquire the American Merchant and United States lines in the formation of his American company, but it is considered doubtful that he will be able to win over the shipping board as long as he operates foreign tonnage.

The shipping board recently announced that it would ask bids for the American Merchant and United States line services, but stipulated that the purchaser must be in a po-

sition to guarantee all-American operation.

Stockholders of the International Mercantile Marine on June 17 approved the proposal to sell the White Star line for \$35,000,000 cash, or partly for cash and partly for credit, with a provision limiting the International Mercantile Marine company's competition in certain trade routes.

Swiss Navigation Exhibit

An international exhibition for inland navigation and utilization of hydraulic power will be held at Basle, Switzerland from July 1 to Sept. 15. By arranging this international exhibition, the government of Basle, intends to celebrate the opening of the new Rhine harbor. The terminal of the highway of international trade extends from the sea, far into the Continent. This new harbor will make Basle a clearing center for trade and traffic between overseas countries and the heart of Europe.

Complete Channel Steel Dump Scow

THE first channel steel hull to be constructed for Great Lakes service, was completed toward the end of April at the plant of the Canadian Locomotive Co., Ltd., Kingston, Ont., Canadian representatives for this type of construction, under the patents, of Louis Henley, Rome, N. Y.

The hull is a 250-yard dump scow of tunnel type, 105 feet in length,

28 feet 4 inches in beam, and 9 feet 4 inches in depth, with the pocket doors opening through the top of the tunnel, permitting the scow to be run aground, if necessary, to discharge her load without injury to the pocket doors. The owner of this scow, is the Frontenac Dredging Co., Toronto, Ont.

This hull is one of a number of various types constructed under the

same system, and is of unusual interest, because of the simplified methods used in construction and the unique properties of the completed structure. Fabrication and complete erection of the hull took place under cover and when completed it was launched through a large door, into the St. Lawrence river. Structural steel channels, 12 inches by 20.7 pounds were used throughout in the hull con-



END VIEW OF THE TWO HALVES OF THE CHANNEL STEEL DUMP SCOW DURING CONSTRUCTION. NOTE.—THE SPECIALLY MADE LEVER CLAMP FOR BRINGING THE FAYING FLANGES INTO CLOSE CONTACT



Stronger-- and More Flexible Than Ordinary Rope

THIS is a reputation well earned, for into every length of Plymouth is spun more than one hundred years of rope making experience.

Regardless of whether it is for towing, mooring, stevedoring or general purpose work, you can always trust Plymouth Rope.

Judge for yourself—order Plymouth on your next requisition for rope, then compare its wearing qualities—The service you get will surprise you.

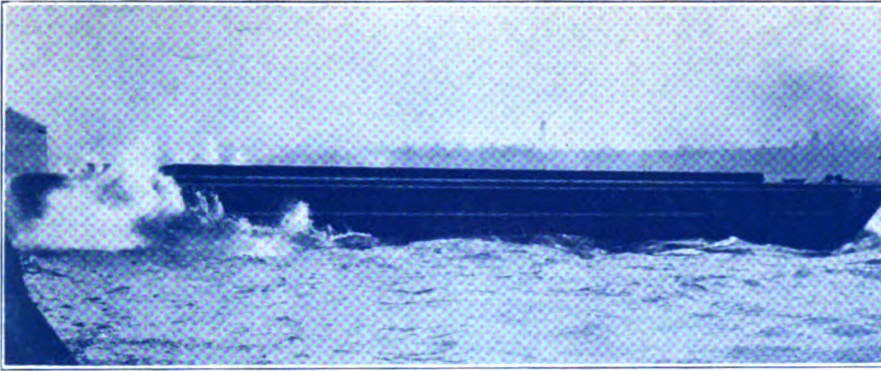


*Ship Chandlers everywhere
handle Plymouth Cordage*

PLYMOUTH CORDAGE COMPANY
North Plymouth, Mass. Welland, Can.

PLYMOUTH *The Rope You Can Trust*

Please mention MARINE REVIEW when writing to Advertisers



LAUNCHING OF THE CHANNEL STEEL DUMP SCOW FROM THE PLANT OF THE CANADIAN LOCOMOTIVE CO., KINGSTON, ONT.—THIS SCOW IS OWNED BY THE FRONTENAC DREDGING CO., TORONTO, AND IS NOW IN SERVICE ON THE GREAT LAKES

struction, with the exception of those forming the hoppers, which are 12 inches by 25 pounds structural steel channels. One of the outstanding features, is that no plates were used whatsoever in the entire hull, with the exception of a few brackets for the raked end frames, and a few short inside butt straps where two channel strakes were butted, and electric welded. The seams formed by riveting the flanges of the shell channels together were set up tight in the following manner. All faying surfaces of the flanges were thoroughly cleaned

work, a new 50-ton Hanna bull riveter was purchased and mounted on a four wheel carriage so that the machine could be run down the full length of each seam before starting on the next.

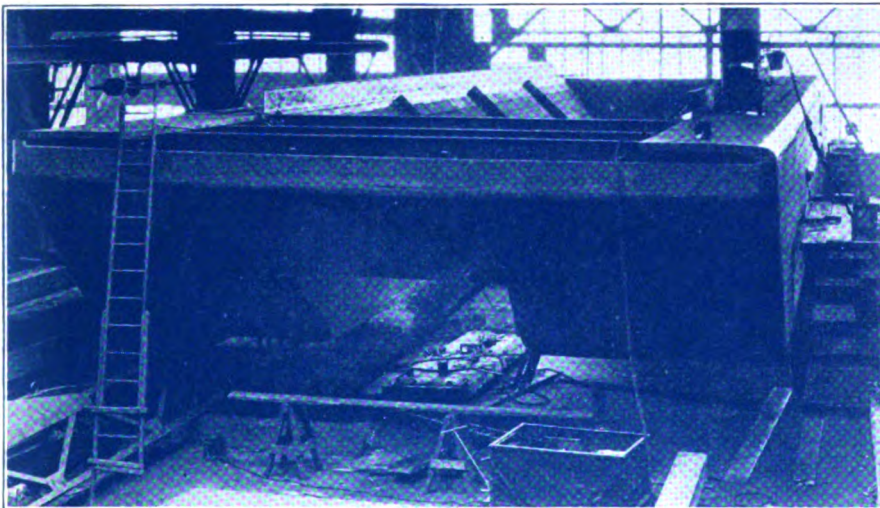
A few special but simple lever clamps were made to work just ahead of the bull riveter as shown in illustration on page 48, pulling the joints together closer than can be done with bolts, thus insuring uniform work in all seams. Practically all bolting up is eliminated when three of four clamps are used ahead of the riveting machine. All rivets throughout

the entire hull, were of $\frac{3}{4}$ -inch diameter, and the spacing for all seams was 6 inches between centers. All holes were punched 13/16-inch and reaming was not required. A special type of gage was also made, to take readings at the seams, to insure that they were all pulled home and uniform, both before and after the riveting was done.

Thus a particularly good job of riveting was obtained. The actual width of the riveted seam as shown by a cut taken through one of the joints did not exceed 1/32-inch, and it is impossible to detect any of the cotton felt packing, on the outside shell. The joint is thus positively caulked for its full depth of 3 inches, is completed in one operation, and give a water and oil tight job with a rivet spacing of 6 inches between centers. Cotton felt packing was used in preference to tar paper, canvas, wicking, or other materials, because it is more resilient, nominal in cost, and indestructible in such a joint.

The webs of the channels forming the gunwale roll, bilge and chines, were all bent to a 6-inch radius by a set of cast iron dies in a hydraulic press. All of the bending for the entire hull was done in about four hours, and it was perfect bending. Such bending can however, be done by other methods. The use of channels, with their flange stiffeners, in these places where the hull is subjected to the severest punishment, is claimed to be one of the distinct merits in this system.

Perhaps the most noticeable feature in this construction, is the elimination of practically all riveting through the outer shell. The only rivets which do penetrate the shell are at the infrequent channel butts through the inside butt straps. The butts were carefully electric welded and as they are

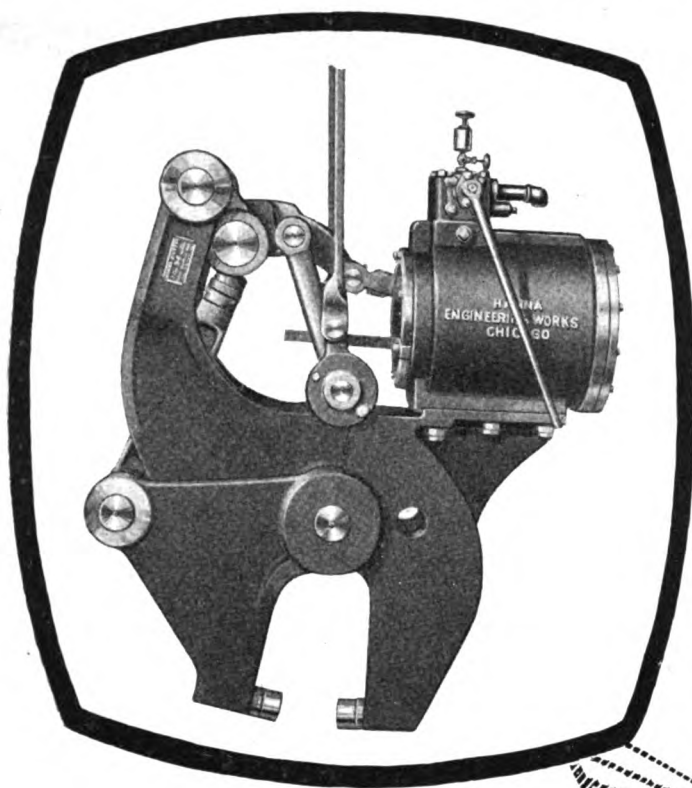


TOP VIEW OF CHANNEL STEEL DUMP SCOW SHOWING PORTION OF HOPPERS —HULL NEARING COMPLETION

and given a thin coat of red lead and linseed oil, which was allowed to dry thoroughly before the riveting was started. The required number or channel strakes for a complete side, end, bottom, or deck, were then laid out on the shop floor about an inch apart and a thin strip of 3/16-inch cotton felt for packing, was inserted the entire length of all seams. The flanges were then bolted up, with a few holding bolts, and the job was ready for the bull riveting machine. For this



END VIEW SHOWING DUMP SCOW IN PROCESS OF CONSTRUCTION WITH BULK-HEAD CONNECTING THE TWO HALVES IN PLACE—NOTE WIDTH OF TUNNEL



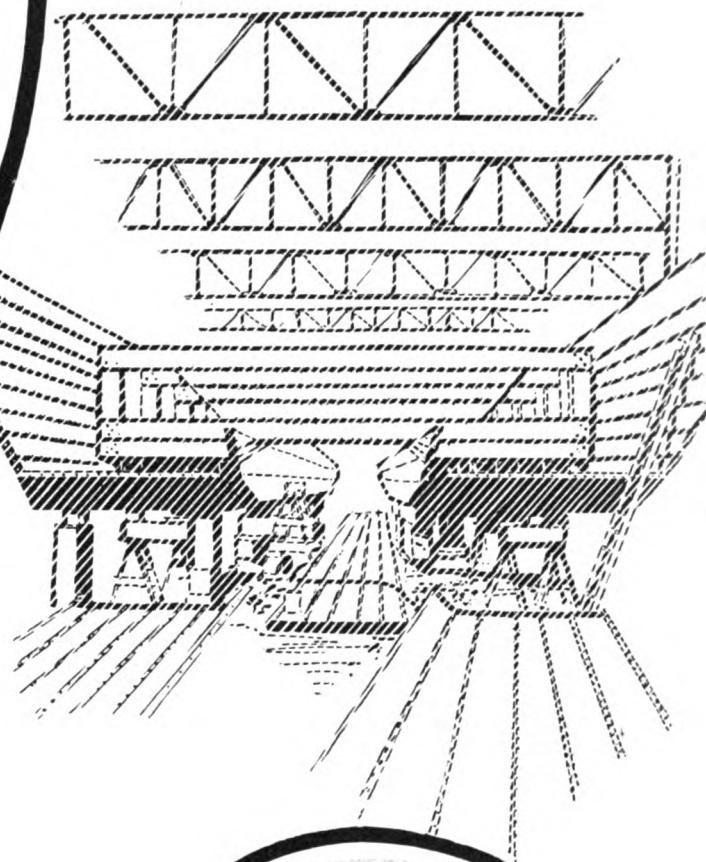
Barge Building

With A

Hanna Riveter

Wherever there is riveting you will find a Hanna Riveter driving the rivets with a pre-determined uniform pressure, filling the hole and guaranteeing the maximum shearing and bearing value for every rivet.

HANNA ENGINEERING WORKS
1764 ELSTON AVE. CHICAGO, U. S. A.



Please mention MARINE REVIEW when writing to Advertisers

only one foot in depth, and widely staggered, a strong construction is obtained. Should the hull rub the bottom, dock, or lock walls, there is practically no chance of chafing rivets, thus causing leaks or loosening up the frames which in turn loosen up other members in the structure.

The frame spacing throughout is 6 feet and all frames are secured to the flanges of the shell channels by angle clips as shown at the right in illustration on page 48. All frames, floors, beams, deck and outside walls are of 12 inches by 20.7 pounds structural channels, which simplifies the construction and reduces the cost. Corner bracket plates are not required in a hull of this size when using 12-inch channels. By carrying the shell channels completely around the whole cross section of the hull, an unbroken link is formed which reduces the tendency of the hull to rack and pull apart, especially in the corners. There are no square corners whatsoever in the

entire hull. With a flanged girder every 12 inches running entirely around the hull, the danger of scalloping of the shell between frames, is eliminated. It is therefore claimed that there is less upkeep in this system as well as reduced construction cost, great strength, and large deadweight capacity.

As will be seen from the accompanying illustrations the hull was built in two halves, and when both were well along, and ready to be joined together, the overhead crane picked up one end of one of the halves and set it over in place, and then the other end was similarly shifted. Each half rested during construction on two sets of blockings, placed about 15 feet from each end and after the entire hull was completed it was balanced on only one block at midship to graphically demonstrate its longitudinal strength. This dump scow is now in use at Port Stanley, Ont.

Weeks, Secretary Wilbur, Secretary Hoover, T. V. O'Connor, chairman of the shipping board and Leigh C. Palmer, then president of the Emergency Fleet Corp. General Dalton worked with this committee and demonstrated his ability in merchant marine problems."

When chairman O'Connor was asked whether this new appointment indicated any change in policy, he replied: "There has been no change in the board's policy of placing in the hands of a single executive sufficient authority for the successful administration of the Fleet corporation's affairs, the shipping board acting as a board of directors, and the policy as fixed by the board in 1924 for consolidations and ship sales involving all possible reduction in administrative expenses and other economies will be persistently pursued."

"The appointment of General Dalton has the support and approval of American shipping interests. The American merchant marine is here to stay and with General Dalton in charge of the administrative operating affairs we confidently expect to go forward in that direction."

Gen. A. C. Dalton Appointed Emergency Fleet Head

T. V. O'CONNOR, chairman of the United States shipping board, announced on July 8 that the shipping board had accepted the resignation of Elmer E. Crowley as president of the Emergency Fleet Corp., effective immediately, and elected in his stead, Brig. Gen. A. C. Dalton as president of the Fleet corporation.

General Dalton at the time of his election was assistant to the quartermaster general of the United States army. The service record of Brig. Gen. A. C. Dalton, assistant quartermaster general, follows:

Enlisted, United States army, Jan. 18, 1889; second lieutenant, infantry, July 31, 1891.

Served in grades first lieutenant, captain, major, lieutenant colonel and colonel, regular army to Dec. 7, 1922.

Brigadier general (temporary) in the World war.

Appointed assistant quartermaster general, rank of brigadier general Dec. 8, 1922.

Special experience in transportation and construction, including army transport service, Cuban expedition, 1906; Vera Cruz expedition, 1914.

Organization overseas shipping depot, Philadelphia, Pa., 1917.

General superintendent, army transport service New York, Oct., 1917, to Nov., 1918, including supervision of activities pertaining to the chartering, conversion, equipping and operating of vessels of the army transport service, and allied water transportation activities; operation of docks, railway terminals, and storage facilities, utilized by the embarkation service in New York area. Awarded distinguished service medal for this service.

Chief of transportation service, office of quartermaster general, including army transport service, 1922 to 1924.

War department representative in hear-

ings on ship subsidy bill; assistant to Secretary of War Weeks, in work of the President's merchant marine committee, 1924.

Chief of construction, office of quartermaster general, in charge of real estate sales and disposals, and construction activities of the army.

Chairman O'Connor when asked with respect to the change at this time in the presidency of the Emergency Fleet Corp. said:

"A majority of the United States shipping board felt that we required the services of a big executive trained in organization on a large scale—a man who had had long experience in important executive work. At the same time we wanted a man who had been actively engaged in ocean transportation. General Dalton seemed to us to fill the bill. His experience while in charge of the army transport service and in handling of water transportation during the war is common knowledge.

"General Dalton has had a vast experience in connection with the purchase of supplies and general business administration. His knowledge of and enthusiasm for a real American merchant marine are well known. He knows its commercial aspects and its value and relation to the country's national defense. In March, 1924, the President appointed a committee to study merchant marine affairs consisting of Secretary Mellon, Secretary

U. S. Lines for Sale

A definite proposal has been made by the United States shipping board to sell the government's two principal transatlantic lines. This would mean a sale of the LEVIATHAN, GEORGE WASHINGTON, REPUBLIC, PRESIDENT ROOSEVELT and the PRESIDENT HARDING all of United States lines, and the AMERICAN MERCHANT, AMERICAN BANKER, AMERICAN FARMER, AMERICAN TRADER, and AMERICAN SHIPPER. These vessels were converted from the type B, Hog island, troop transports, each of 8000 deadweight tons. There is also included the six freighters CAPULIN, CHICASAW, CITY OF FLINT, LEHIGH, and QUAKER CITY, each of 7800 tons deadweight, and the WEST CANON, of 8600 tons.

Approximate estimates have been made by experts placing the value of the two services at \$27,000,000. Included in the United States lines is also the AMERICA, MOUNT VERNON, and AGAMEMNON of more than 20,000 tons each and now out of commission and in no condition for service without the expenditure, to do a reasonably thorough job, of from one and one-half to two million dollars per ship.

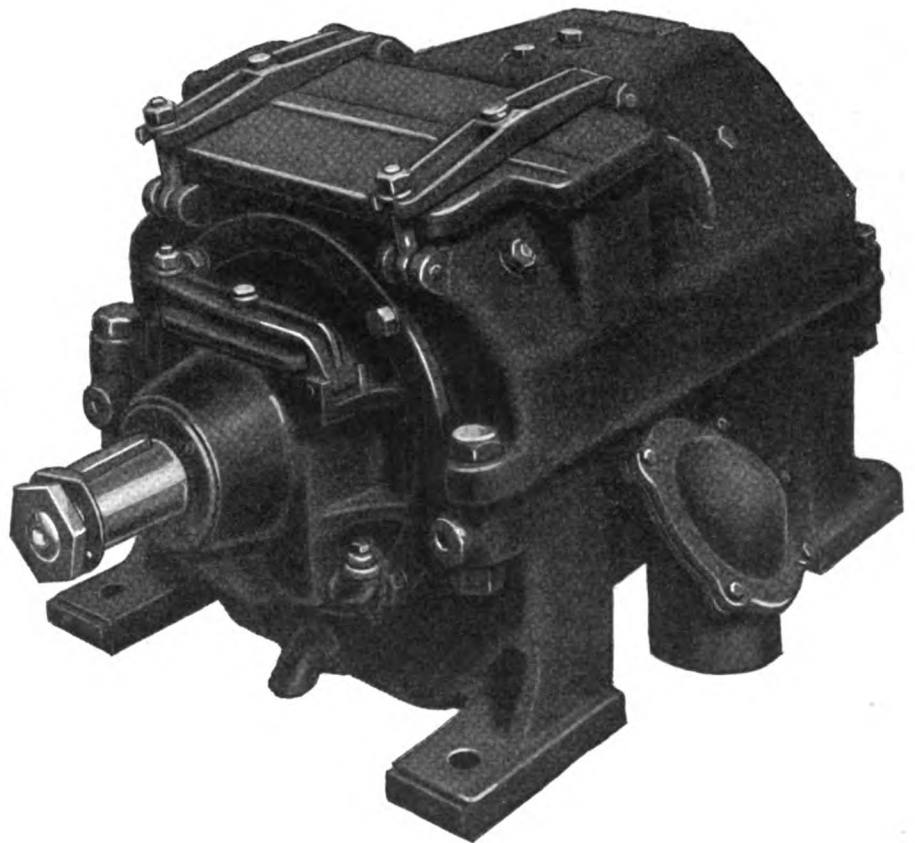
The shipping board on July 20, rejected all bids for the reconditioning of the S. S. MOUNT VERNON and the S. S. AMERICA.

G-E built it for deck auxiliaries

—and it's typical of all the General Electric equipment for service at sea.

This deck auxiliary motor, totally enclosed, waterproof, and with non-corrodible materials to resist salt water, is a motor of unusual strength, built to give long, low-cost service under every operating condition.

Easy to handle, positive in brake control, it is especially suited for driving any deck auxiliary where power and reliability are demanded.



Each year more ship operators are learning by experience the economic advantages of specifying G-E Equipment throughout.

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN ALL PRINCIPAL CITIES

Please mention MARINE REVIEW when writing to Advertisers

What the British Are Doing

Short Surveys of Important Activities in Maritime
Centers of Island Empire

THE six months ended June is considered by Scottish shipbuilders to have been one of the most unsatisfactory half-yearly periods experienced for a long time. The vessels launched from Scottish ports numbered 114, representing 173,891 tons, whereas in the corresponding period of last year 140 vessels of 324,557 tons were put into the water on the Clyde and the east coast. The last half year has commenced badly, with a coal strike in progress and poor demand for ships. The world's shipping trade gives little encouragement to the owners of passenger and cargo vessels to increase their fleets, and the contracts placed have been almost wholly for vessels considered absolutely necessary for the maintenance of essential services.

* * *

CAMMELL LAIRD & CO., Birkenhead have launched the first of three geared turbine steamers and cargo steamers ordered for the Blue Star Line London. This is one of nine being constructed for the line's South American service bringing up the total fleet to 27 vessels of over 200,000 tons. The ship launched is the ALMEDA of 14,000 tons gross. She will have accommodation for 180 first class passengers and will be fitted with refrigerating plant for the carriage of frozen or chilled meat. Mr. Dewek, the general manager states that when the new vessels are completed the firm will run a fortnightly service between London and the capitals of Brazil and Argentina.

* * *

A REPORT which appears to be well authenticated is that the

government proposes to withdraw the trade facilities act, which has been largely utilized for the financing of important industrial schemes. The ALMEDA, it is explained, was built with the financial aid of this measure. W. L. Hichens, the chairman of Cammell Laird, has strongly condemned this piece of government policy, stating that the act has done extremely useful work for the country, especially to the shipbuilding industry.

* * *

TWO lightships now building by the Caledon Shipbuilding and Engineering Co., Dundee, for the Corporation of Trinity House, London have some special features embodying the latest ideas. Each is fitted with two fog signals, compressor and dynamo sets of 4-cylinder semi-diesel Gardner engines each directly coupled to a quadruplex Reavell compressor at one end a dynamo at the other and three electric light sets of 2-cylinder semi-diesel Gardner engines coupled to a dynamo. The electric lamp will have a light of about one million candle power, this being a new feature of vessels of the type. The fog signal is of the latest diaphone type and is operated by compressed air generated through large air receivers.

* * *

ALTHOUGH orders are scarce at the shipyards, a large number of inquiries are pending which it is believed would be translated into orders if normal supplies of coal, iron and steel were available. The builders still have sufficient confidence to carry out improvements in their equip-

ment preparatory to handling future business. Cammell Laird & Co. have lately purchased several big cantilever cranes on the site of the derelict national shipyard at Beechley for re-erection at the Birkenhead yards.

* * *

A GREAT deal of public attention has been attracted to the joint report issued by the Shipbuilding Employers federation and shipyard trade unions. In regard to costs of production they find little reason to complain of over charges in connection with steel forgings, and castings for which it is said keen prices are quoted. But they find that for such goods as lead, upholstering, paint, electric cables, ropes and light castings, prices are from 100 to 200 per cent above prewar figures. In some cases, also, they find that lower prices are quoted to foreign competitors than are named to home purchasers. They believe these excessive prices are largely due to price fixing associations. Strong complaint is also made about heavy taxation. They have asked the government to investigate the operations of price fixing rings with a view to more moderate terms. The committee found that whereas skilled labor on the Tyne cost £2 15 s 6d a week, this could be obtained at Rotterdam for £2 4s 6d and Hamburg £1 15s 8d, and the cost of unskilled labor is much lower. In Germany the working week is 54 hours compared with 47 in Britain, while Dutch shipwrights often work 56½ hours. The committee strongly condemn the withdrawal of the trade facilities act which has been very useful in the financing of shipbuilding.

What's Doing Around The Lakes

THE INDIANA of the Goodrich Transit Co., Chicago, is now making Manistique, Mich., a port of call on its weekly trip from Chicago to west Lake Michigan ports and Mackinac.

* * *

MAJ. RUFUS PUTNAM, formerly federal engineer at Chicago, but

now on the staff of the Commercial club of Chicago, has sailed for Europe to make a comprehensive survey of port facilities.

* * *

MASTERS of foreign vessels calling at Great Lakes ports are complaining of the desertion of their

seamen. Recently seven of a crew of 18 of a Norwegian tramp which brought spruce pulp to Milwaukee deserted.

* * *

CARSON, PIRIE SCOTT & CO., one of Chicago's largest department stores, has purchased a diesel-

MARINE DEPARTMENT of

American Bridge Company

FRICK BUILDING

PITTSBURGH, PENNA.

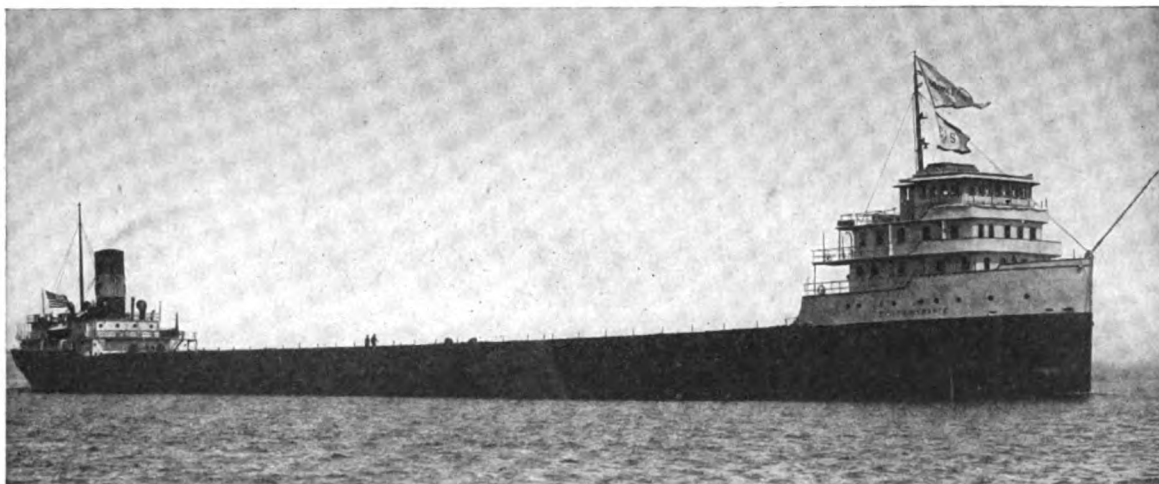
BUILDERS OF

STEEL BARGES

for RIVERS and HARBORS

CAR-FLOATS

THE BABCOCK & WILCOX CO.

Manufacturers of Marine Water Tube Boilers Since 1895

Steamer "JOSEPH H. FRANTZ", The Columbia Steamship Company

Equipped with
Babcock & Wilcox Water Tube Boilers and Superheaters

THE BABCOCK & WILCOX CO.

Marine Department
85 LIBERTY STREET, NEW YORK

Please mention MARINE REVIEW when writing to Advertisers

propelled tug and three barges for the transportation of goods between two of its warehouses on the Chicago river.

* * *

RECEIPTS of iron ore and limestone at Gary, Ind., in the first half of 1926 equaled those in the first half of 1925 despite the fortnight late start. Ore taken in at Gary in the first half of this year totaled 1,542,123 tons, against 1,545,548 last year. Limestone tonnage is 421,571, compared with 365,526 last year.

ABOUT 15,000 tons of French cast iron pipe is expected to be brought to Great Lakes ports, principally Detroit, this season. Recently the Norwegian vessel JAN brought 1500 tons to Detroit and Chicago. The freight charges totaled \$11,250, of which \$1950 was for the 50c per ton loading charge at Antwerp and 60c and 80c for unloading at Detroit and Chicago, respectively.

* * *

IN 1925 the 48 bridges over the Chicago river in Chicago were opened 94,685 times for a total of 5689 hours.

This is being used as a further argument for fixed bridges.

* * *

THE Chicago & New Orleans Transportation Co. has been incorporated at Chicago for \$1,000,000, with Col. Leopold Moss, 4224 Ellis avenue, Chicago, president. A freight and passenger business from Chicago to New Orleans with various branches is said to be contemplated. Sites for docks and warehouses have been obtained at Chicago and negotiations are on with the American Shipbuilding Co., Cleveland, for steel barges.

Ocean Freight Rates

Per 100 Pounds Unless Otherwise Stated

Quotations Corrected to July 20, 1926 on Future Loadings

NOTE: FREIGHT RATES STEADY WITH BUSINESS SLOW

| New York to | Grain | Provisions | Cotton (H. D.) | Flour | General cargo cu. ft. | 100 lbs. | ††Finished steel | REMARKS Freight Offered | From North Pacific Ports to | Lumber Per m. t. |
|-----------------------------|--------|--------------|----------------|--------------|-----------------------|----------|------------------|-------------------------|------------------------------|------------------|
| Liverpool..... | 2s 3d | \$0.50 | \$0.30 | 0.20 | \$0.40 | \$0.75 | \$7.00T | Dull | San Francisco..... | \$3.00 to 3.50 |
| London..... | 2s 3d½ | 0.50 | .... | 0.20 | 0.40 | 0.75 | 7.00T | Dull | South California..... | 4.00 to 4.50 |
| Oslo..... | \$0.13 | 0.45 | 0.50 | 0.27 | 0.42½ | 0.85 | 7.00T | Fair | Hawaiian Islands..... | 9.50 to 10.50 |
| Copenhagen... | 0.13 | 0.45 | 0.40 | 0.26 | 0.42½ | 0.85 | 7.00T | Fair | New Zealand..... | 16.00 to 18.00 |
| Hamburg..... | 0.11 | 0.35 | 0.40 | 0.18 | 0.37½ | 0.75 | 8.00T | Dull | Sydney..... | 13.00 to 13.50 |
| Bremen..... | 0.12 | 0.35 | 0.40 | 0.18 | 0.37½ | 0.75 | 8.00T | Slow | Melbourne-Adelaide... | 13.00 to 14.00 |
| Rotterdam and Amsterdam.... | 0.12 | 0.32½ | 0.45 | 0.18 | 0.35 | 0.70 | 7.50T | Fair | Oriental Ports..... | 9.25 to 10.25 |
| Antwerp..... | 0.10 | 0.32½ | 0.35 | 0.18 | 0.35 | 0.70 | 7.50T | Fair | Oriental Ports (logs)... | 13.00 to 16.00 |
| Havre..... | 0.11 | 0.50 | 0.35 | 0.27½ | 0.40 | 0.75 | 8.00T | Very slow | Peru-Chile..... | 13.00 to 14.50 |
| Bordeaux..... | 0.11 | 0.50 | 0.35 | 0.27½ | 0.40 | 0.75 | 8.00T | Very slow | South Africa..... | 16.50 to 18.00 |
| Barcelona..... | .... | 12.00T | 0.30 | 10.00 | —12.00T— | .... | 8.00 to 15.00T | Slow | Cuba..... | 14.00 to 15.00 |
| Lisbon..... | 0.20 | 0.65 | 0.40 | 7.00T | —20.00T— | .... | 7.00T | Good | United Kingdom..... | 75s to 85s |
| Marseilles..... | 0.15 | 0.55 | 0.30 | 6.00 | —20.00T— | .... | 5.50T | Very slow | United Kingdom (ties)... | 70s to 80s |
| Genoa..... | 0.17 | 12.50 | 0.40 | 7.00 | —20.00T— | .... | 10.00T | Fair | Baltimore-Boston range.. | \$10.50 to 12.00 |
| Naples..... | 0.17 | 12.50 | 0.40 | 7.00 | —20.00T— | .... | 10.00T | Fair | Florida Range..... | No rates |
| Constantinople. | 0.27 | 17.00T | 0.75 | 0.42 | —20.00T— | .... | 9.00T | Fair | Buenos Aires..... | 14.00 to 15.00 |
| Alexandria..... | .... | 17.00T | 0.75 | 0.42 | —20.00T— | .... | 9.00T | Fair | Flour and Wheat | |
| Algiers..... | .... | 0.75 | 0.50 | 0.40 | —20.00T— | .... | 10.00T | Very poor | U. K. and Continent | |
| Dakar..... | .... | 15.00 | .... | 14.00T | —21.00T— | .... | 10.50T | Good | (gross ton)..... | 27s 6d to 30s |
| Capetown..... | 8.00T | 18.00 | .... | 13.00T | —20.00T— | .... | 11.00 to 18.00T | Good | Oriental Ports (net tons)... | \$3.75 to 4.25 |
| Buenos Aires... | .... | 20.00T | .... | .... | —20.00T— | .... | 8.00T | Fair | | |
| **Rio de Janeiro | .... | 22.00T | .... | 8.00T | 20.00 to 22.00T† | .... | 7.00 to 7.70T† | Fair | | |
| Pernambuco.... | .... | 22.00T | .... | 9.00T | —22.00T—† | .... | 9.70T† | Fair | | |
| Havana..... | 0.22½* | 0.50 | .... | 0.30* | 0.61* | 1.33* | 4.00* | Fair | | |
| Vera Cruz..... | .... | 0.30 | 0.35 | 0.25 | 0.52½ | 1.05 | 0.30 to 0.35 | Good | | |
| Valparaiso.... | .... | 1.07 | .... | 0.70 | 0.45 | 0.80 | 10.00T | Very good | | |
| San Francisco.. | .... | 0.35 to 0.70 | .... | 0.50 to 1.10 | .... | .... | 0.25 to 0.80 | Fair | | |
| Sydney..... | .... | 18.00T | 1.25 | 1.18T | 18.00-24.00T | .... | 9.00-12.00T | Fair | | |
| Calcutta..... | .... | .... | 0.45 | 10.00T | —16.00T— | .... | 10.00T | Fair | | |

T—Ton. †Per quarter of 480 lbs. †Landed. ††Heavy products limited in length. *Extra charge for wharfage.

**Plus \$0.50 surcharge on all rates to Rio de Janeiro on account of congestion.

Principal Rates To and From United Kingdom

| | | | | | |
|--|--------|---|--|----|----|
| Grain, River Plate to United Kingdom.. | 18 | d | Pig iron, United Kingdom to New York or Philadelphia | 12 | d |
| Coal, South Wales to Near East..... | — | — | Iron ore, Bilbao to Cardiff..... | 5 | 10 |
| Coal, United Kingdom to Buenos Aires.. | — | — | Iron ore, Huelva to Philadelphia or Balto..... | 10 | 6 |
| Manganese Ore, Poti to Philadelphia... | \$3.70 | | | | |

NOTE: Lighterage rates on fuel in New York reduced from 6½ to 5½c per barrel. Owing to the coal stoppage in Britain no outward freight rates or bunker prices for coal or pig iron are quoted.

Bunker Prices

At New York

| | Coal alongside per ton | Fuel oil alongside per barrel | Diesel engine oil alongside per gallon |
|----------------|------------------------|-------------------------------|--|
| Sept. 19, 1925 | 5.50@6.00 | 1.71½ | 5.00c |
| Oct. 17..... | 5.00@6.00 | 1.70½ | 5.00 |
| Nov. 18..... | 5.50@5.60 | 1.70½ | 5.00 |
| Dec. 18..... | 5.60 | 1.70½ | 5.00 |
| Jan. 2..... | 5.50@6.25 | 1.75@1.80 | 5.25 |
| Mar. 18..... | 5.60@5.80 | 1.80½ | 5.50 |
| Apr. 22..... | 5.25@5.60 | 1.80@1.81½ | 5.75 |
| May 19..... | 5.25@5.60 | 1.80½ | 5.88 |
| June 18..... | 5.50@5.60 | 1.80½ | 6.08 |
| July 20, 1926 | 5.00@5.60 | 1.80½ | 6.08 |

At Philadelphia

| | Coal trim. in bunk per ton | Fuel oil alongside per barrel | Diesel Eng. oil alongside per gallon |
|---------------|----------------------------|-------------------------------|--------------------------------------|
| Oct. 17, 1925 | 5.25@5.50 | 1.71½@1.74½ | 5.15@5.65c |
| Nov. 18..... | 5.40@5.65 | 1.71½@1.74½ | 5.15@5.25 |
| Dec. 18..... | 5.15@5.50 | 1.71@1.74½ | 4.89@5.15 |
| Jan. 20..... | 5.50@6.25 | 1.71@1.79 | 5.00@5.65 |
| Feb. 18..... | 5.80 | 1.78@1.86½ | 5.14@5.50 |
| Mar. 18..... | 5.00@5.25 | 1.80@1.86½ | 5.40@5.65 |
| Apr. 22..... | 5.25 | 1.77@1.86½ | 5.90@5.93 |
| May 19..... | 5.25@5.70 | 1.82@1.86½ | 6.15@6.38 |
| June 18..... | 4.90@5.15 | 1.80@1.86½ | 6.15@6.43 |
| July 20, 1926 | 5.10@5.50 | 1.74@1.81½ | 5.07@6.15 |

Other Ports

| | |
|--|--------|
| Boston, coal, per ton.... | \$6.88 |
| Boston, oil, f. a. s., per barrel..... | \$1.85 |
| Hampton Roads, coal, per ton, f.o.b., piers..... | 4.45 |
| July 9—Cardiff, coal, per ton..... | —d |
| London, coal, per ton..... | —d |
| Antwerp, coal, per ton..... | —d |
| Antwerp, Fuel oil, per ton | 77s 6d |
| Antwerp, Diesel oil, per ton..... | 97s 6d |
| British ports, Fuel oil..... | 72s 6d |
| British ports, Diesel oil..... | 87s 6d |

Lundin Life Boats Saved Crew of Antinoe

Modern Inventions Save Crew Wireless, Radio Compass and Lundin Life- boats Enable Rescuers to Reach the Antinoe.

Without the inventions of the twentieth century the crew of the British freighter Antinoe, who were rescued last week by the United States liner President Roosevelt, would have perished.

Lundin Boat Almost Unsinkable.
The Lundin boat, which is still regarded with suspicion by older seamen, is an all metal, broad, shallow life boat, so buoyed up with air tanks as to be almost unsinkable. It cost Capt. Fried of the President Roosevelt six Lundin boats to save the Antinoe's crew. He attempted to use the davits. This is an endorsement so sincere and from such an authoritative source that the Lundin may be accepted universally as the lifeboat for the heaviest seas.

In rescuing the sailors of the Italian freighter Ignazio Florio two months ago Capt. Greening of the President Harding also used Lundins exclusively. Chief Officer Miller, when he arrived in Quehstown, spoke with unrestrained enthusiasm of the Lundin boat, and one of the Roosevelt's passengers, a veteran of many crossings, insisted that no other type of lifeboat could have lived in the waves between the American and the British liners.

From New
York Sun.
Feb. 1.
1926.

"THE Lundin boat is an all metal, broad, shallow lifeboat, so buoyed up with air tanks as to be almost unsinkable. Capt. Fried of the President Roosevelt attempted to use none of the other lifeboats hanging on the davits and without the LUNDIN LIFEBOATS, an innovation of the last decade, Capt. Fried might have been forced to stand powerless on the bridge and watch the freighter go down with all hands.

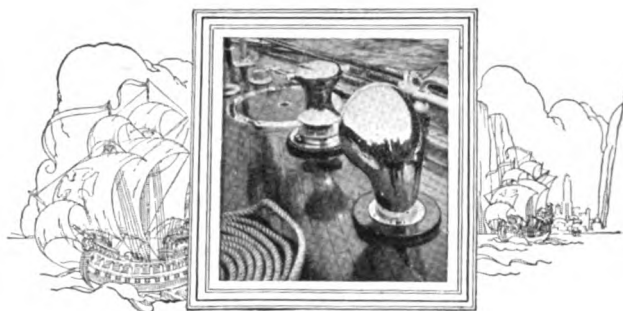
This is a sincere and authoritative endorsement that the "Lundin" may be accepted universally as the lifeboat for the heaviest seas.

In rescuing the sailors of the Italian freighter Ignazio Florio three months ago, Capt. Greening of the President Harding also used Lundins exclusively.

Chief Officer Miller spoke with unrestrained enthusiasm of the Lundin boat, and one of the Roosevelt's passengers, a veteran of many crossings, insisted that no other type of lifeboat could have lived in the waves between the American and British liners."



Welin Davit & Boat Corp.
305 Vernon Ave., Long Island City, N. Y.



Dream Ships

YOU have perhaps dreamed of that perfect ship on which the brass and nickel would stay bright without polishing.

CRODON, the Chrome Alloy Plate, now makes this dream a reality, for, as CRODON surfaces never tarnish nor corrode, they never need polishing. A mere wiping with a cloth removes grease or other foreign matter, leaving the original lustre unaffected.

Salt air and salt water have no effect on it. In fact, CRODON surfaces have withstood severe salt-spray tests for over 300 hours without showing any signs of physical breakdown. Each test has represented several years' service.

The unusual beauty of CRODON permits of no confusion with ordinary finishes. It is available either in a brilliant mirror-like surface or a soft silvery satin.

Any CRODON-plated fixture is guaranteed to retain its high lustre and color indefinitely from the time of installation without the necessity of using abrasives or any polishing compounds.

Moreover, a CRODON-plate will never peel nor discolor, resisting service wear, steam, sulphur and the majority of acids.

Upon request our Marine Division will give all details and estimate the probable cost of CRODON-plating your present equipment or that of any new boat. Write the Chemical Treatment Co., Inc., 26 Broadway, New York City.

Specify CRODON for:

Ships' Bells, Binnacles, Binnacle Stands, Reverse Levers, Cleats, Engine Room Telegraphs, Chocks, Capstans, Windlass, Steering Wheels, Port Lights, Electric Fans, Search Lights and Reflectors, Plumbing Fixtures, Door Hardware, Hinges, Exposed Pipes, Rails.

CRODON
The Chrome  Alloy Plate
Applied Only to  Quality Products

Chemical Treatment Co., Inc., Dept. M-5
26 Broadway, New York City

Gentlemen: Please send me your booklet "CRODON for Marine Hardware and Fittings."

Name

Address

City State

Please mention MARINE REVIEW when writing to Advertisers

Marine Business Statistics Condensed

Record of Traffic at Principal American Ports for Past Year

New York

(Exclusive of Domestic)

| Month | Entrances | | Clearances | |
|----------------------|-----------|-------------|------------|-------------|
| | No. ships | Net tonnage | No. ships | Net tonnage |
| June, 1926..... | 542 | 2,337,678 | 563 | 2,279,208 |
| May | 448 | 1,856,777 | 538 | 2,126,788 |
| April | 483 | 1,967,964 | 538 | 2,248,081 |
| March | 523 | 2,090,347 | 511 | 2,033,938 |
| February | 404 | 1,591,273 | 454 | 1,826,886 |
| January | 407 | 1,671,761 | 463 | 1,883,094 |
| December | 481 | 1,706,900 | 510 | 2,022,775 |
| November | 473 | 1,902,745 | 488 | 1,886,587 |
| October | 460 | 1,920,797 | 530 | 2,229,801 |
| September, 1925..... | 449 | 1,960,366 | 505 | 2,117,563 |

Philadelphia

(Including Chester, Wilmington and the whole Philadelphia port district)
(Exclusive of Domestic)

| (Exclusive or Domestic) | | | | | |
|-------------------------|------------|-------------|-------------|-------------|--|
| Month | Entrances— | | Clearances— | | |
| | No. ships | Net tonnage | No. ships | Net tonnage | |
| May, 1926 | 97 | 215,829 | 69 | 151,287 | |
| April | 80 | 185,401 | 61 | 135,919 | |
| March | 107 | 264,754 | 72 | 168,858 | |
| February | 78 | 184,715 | 52 | 118,763 | |
| January | 76 | 206,081 | 52 | 136,040 | |
| December | 83 | 194,283 | 53 | 142,885 | |
| November | 83 | 216,604 | 44 | 116,468 | |
| October | 74 | 193,584 | 49 | 128,906 | |
| September | 85 | 211,019 | 51 | 113,257 | |
| August, 1925 | 84 | 197,743 | 65 | 146,144 | |

Boston

(Exclusive of Domestic)

| Month | Entrances | | Clearances | |
|--------------------|-----------|-------------|------------|-------------|
| | No. ships | Net tonnage | No. ships | Net tonnage |
| June, 1926 | 164 | 370,526 | 109 | 262,468 |
| May | 134 | 277,009 | 111 | 261,878 |
| April | 101 | 285,245 | 77 | 210,542 |
| March | 117 | 356,432 | 62 | 173,217 |
| February | 92 | 263,476 | 42 | 136,613 |
| January | 97 | 287,385 | 55 | 156,167 |
| December | 96 | 270,869 | 67 | 210,662 |
| November | 115 | 341,258 | 59 | 147,554 |
| October | 105 | 312,455 | 73 | 206,347 |
| September, 1925 .. | 114 | 328,275 | 78 | 196,632 |

Portland, Me.

(Exclusive of Domestic)

| Month | Entrances— | | Clearances— | |
|--------------------|------------|-------------|-------------|-------------|
| | No. ships | Net tonnage | No. ships | Net tonnage |
| June, 1926 | 29 | 44,390 | 29 | 46,942 |
| May | 19 | 49,894 | 17 | 47,016 |
| April | 23 | 48,836 | 32 | 73,947 |
| March | 34 | 97,413 | 31 | 88,462 |
| February | 23 | 64,150 | 23 | 66,660 |
| January | 26 | 78,508 | 27 | 81,917 |
| December | 31 | 85,651 | 29 | 75,072 |
| November | 25 | 35,618 | 23 | 33,194 |
| October | 17 | 27,630 | 20 | 34,668 |
| September, 1925 .. | 19 | 36,082 | 22 | 45,258 |

Providence

(Exclusive of Domestic)

| Month | Entrances— | | Clearances— | |
|---------------------|--------------|----------------|--------------|----------------|
| | No. ships | Net tonnage | No. ships | Net tonnage |
| June, 1926 | 5 | 17,954 | 3 | 8,355 |
| May | 7 | 25,057 | 6 | 20,806 |
| April | 8 | 28,449 | 5 | 23,480 |
| March | 15 | 47,557 | 8 | 34,025 |
| February | 8 | 29,622 | 7 | 30,033 |
| January | 5 | 20,355 | 6 | 24,221 |
| December | 16 | 52,660 | 6 | 27,149 |
| November | 6 | 16,446 | 8 | 26,811 |
| October | 9 | 35,405 | 6 | 21,232 |
| September, 1925.... | 7 | 21,260 | 7 | 22,410 |

Portland, Oreg.

(Exclusive of Domestic)

| Month | —Entrances— | | —Clearances— | |
|--------------------|--------------|----------------|--------------|----------------|
| | No. ships | Net tonnage | No. ships | Net tonnage |
| June, 1926 | 22 | 77,850 | 45 | 156,103 |
| May | 35 | 128,351 | 43 | 152,890 |
| April | 17 | 66,789 | 29 | 107,892 |
| March | 21 | 85,073 | 38 | 134,432 |
| February | 23 | 81,440 | 33 | 114,147 |
| January | 22 | 84,722 | 26 | 97,068 |
| December | 23 | 86,443 | 40 | 144,392 |
| November | 28 | 108,796 | 37 | 140,784 |
| October | 26 | 98,371 | 41 | 144,397 |
| September, 1925 .. | 28 | 103,812 | 43 | 158,098 |

Baltimore

(Exclusive of Domestic)

| Month | Entrances | | Clearances | |
|-----------------|-----------|-------------|------------|-------------|
| | No. ships | Net tonnage | No. ships | Net tonnage |
| June, 1926 | 138 | 402,230 | 132 | 371,781 |
| May | 120 | 369,729 | 121 | 355,443 |
| April | 107 | 330,401 | 110 | 326,649 |
| March | 120 | 382,983 | 119 | 362,258 |
| February | 102 | 304,714 | 99 | 288,640 |
| January | 97 | 302,341 | 88 | 264,249 |
| December | 105 | 314,958 | 109 | 332,721 |
| November | 106 | 334,997 | 99 | 312,705 |
| October | 99 | 302,522 | 92 | 293,425 |
| September, 1925 | 93 | 264,465 | 109 | 310,029 |

Norfolk and Newport News

(Exclusive of Domestic)

| Month | Entrances | | Clearances | |
|-----------------|-----------|-------------|------------|-------------|
| | No. ships | Net tonnage | No. ships | Net tonnage |
| June, 1926 | 78 | 215,803 | 171 | 502,701 |
| May, | 40 | 107,858 | 140 | 368,515 |
| April | 21 | 45,875 | 126 | 305,549 |
| March | 22 | 40,160 | 140 | 395,033 |
| February | 20 | 48,377 | 108 | 298,756 |
| January | 26 | 69,958 | 96 | 256,019 |
| December | 24 | 57,907 | 100 | 279,570 |
| November | 27 | 78,573 | 81 | 254,489 |
| October | 26 | 51,328 | 91 | 248,017 |
| September, 1925 | 39 | 94,940 | 85 | 237,623 |

Savannah

(Exclusive of Domestic)

| Month | —Entrances— | | —Clearances— | |
|-------------------|--------------|----------------|--------------|----------------|
| | No. ships | Net tonnage | No. ships | Net tonnage |
| March, 1926 | 43 | 102,126 | 41 | 99,244 |
| February | 40 | 97,908 | 46 | 121,792 |
| January | 38 | 103,029 | 38 | 106,472 |
| December | 37 | 101,726 | 35 | 91,141 |
| November | 37 | 112,158 | 38 | 117,064 |
| October | 45 | 125,766 | 47 | 126,452 |
| September | 50 | 137,030 | 39 | 103,408 |
| August | 34 | 77,027 | 39 | 87,455 |
| July | 38 | 97,332 | 34 | 91,981 |
| June, 1925 | 26 | 60,788 | 27 | 60,924 |

Key West

(Exclusive of Domestic)

| Month | Entrances— | | Clearances— | |
|-------------------|--------------|----------------|--------------|----------------|
| | No. ships | Net tonnage | No. ships | Net tonnage |
| June, 1926 | 94 | 110,100 | 94 | 108,581 |
| May | 114 | 126,089 | 109 | 120,597 |
| April | 88 | 101,331 | 88 | 99,227 |
| March | 102 | 117,292 | 90 | 114,917 |
| February | 70 | 85,607 | 69 | 88,229 |
| January | 80 | 110,684 | 81 | 110,084 |
| December | 89 | 121,193 | 88 | 113,996 |
| November | 96 | 113,222 | 89 | 107,091 |
| October | 77 | 91,125 | 75 | 90,953 |
| September 1925 .. | 76 | 96,356 | 73 | 91,119 |

Mobile

(Exclusive of Domestic)

| Month | Entrances | | Clearances | |
|-------------------|-----------|-------------|------------|-------------|
| | No. ships | Net tonnage | No. ships | Net tonnage |
| May, 1926 | 99 | 183,795 | 95 | 191,442 |
| April | 109 | 205,035 | 98 | 178,025 |
| March | 125 | 228,481 | 115 | 221,022 |
| February | 100 | 153,884 | 92 | 188,057 |
| January | 109 | 212,005 | 78 | 150,384 |
| December | 104 | 183,941 | 89 | 173,371 |
| November | 101 | 191,490 | 95 | 185,722 |
| October | 88 | 258,529 | 84 | 161,648 |
| September | 80 | 149,289 | 76 | 171,432 |
| August, 1925 | 83 | 172,872 | 75 | 152,613 |

Seattle

(Exclusive of Domestic)

| Month | —Entrances— | | —Clearances— | |
|---------------------|--------------|----------------|--------------|----------------|
| | No. ships | Net tonnage | No. ships | Net tonnage |
| June, 1926 | 39 | 165,989 | 42 | 181,090 |
| May | 39 | 159,755 | 44 | 163,718 |
| April | 51 | 215,641 | 47 | 191,161 |
| March | 38 | 166,536 | 45 | 184,067 |
| February | 42 | 168,308 | 45 | 182,920 |
| January | 45 | 182,889 | 50 | 204,058 |
| December | 47 | 201,460 | 55 | 231,787 |
| November | 47 | 199,055 | 46 | 196,343 |
| October | 52 | 203,951 | 49 | 207,153 |
| September, 1925.... | 42 | 173,157 | 43 | 183,917 |

New Orleans

(Exclusive of Domestic)

| Month | Entrances— | | Clearances— | |
|-----------------------|------------|-------------|-------------|-------------|
| | No. ships | Net tonnage | No. ships | Net tonnage |
| June, 1926 | 255 | 658,385 | 221 | 665,960 |
| May | 287 | 753,621 | 284 | 772,138 |
| April | 248 | 626,277 | 296 | 694,678 |
| March | 296 | 764,863 | 300 | 751,054 |
| February | 255 | 717,048 | 250 | 691,747 |
| January | 241 | 659,776 | 243 | 652,209 |
| December | 273 | 750,625 | 279 | 764,022 |
| November | 261 | 645,709 | 232 | 629,728 |
| October | 252 | 729,068 | 276 | 789,419 |
| September, 1925 | 248 | 655,367 | 248 | 680,446 |

Charleston

(Exclusive of Domestic)

| Month | —Entrances— | | —Clearances— | |
|--------------------|--------------|-----------------|--------------|-----------------|
| | No. ships | Net. tonnage | No. ships | Net. tonnage |
| June, 1926 | 8 | 27,095 | 10 | 30,601 |
| May | 5 | 18,321 | 10 | 20,514 |
| April | 11 | 37,459 | 12 | 27,166 |
| March | 18 | 64,432 | 20 | 49,897 |
| February | 10 | 35,629 | 10 | 21,945 |
| January | 8 | 27,610 | 13 | 27,237 |
| December | 14 | 38,441 | 10 | 26,597 |
| November | 17 | 50,093 | 13 | 31,111 |
| October | 22 | 68,795 | 21 | 55,903 |
| September, 1925 .. | 13 | 25,853 | 22 | 47,838 |

Galveston

(Exclusive of Domestic)

| Month | —Entrances— | | —Clearances— | |
|---------------------|-------------|-------------|--------------|-------------|
| | No. ships | Net tonnage | No. ships | Net tonnage |
| February, 1926 | 39 | 89,426 | 71 | 208,388 |
| January | 36 | 92,194 | 75 | 235,699 |
| December | 38 | 88,590 | 97 | 300,872 |
| November | 34 | 107,440 | 83 | 266,458 |
| October | 43 | 98,188 | 96 | 302,581 |
| September | 33 | 96,954 | 72 | 225,194 |
| August | 28 | 80,524 | 41 | 133,058 |
| July | 36 | 100,359 | 52 | 141,316 |
| June | 47 | 120,423 | 57 | 177,647 |
| May, 1925 | 46 | 114,702 | 53 | 151,098 |

Los Angeles

(Exclusive of Domestic)

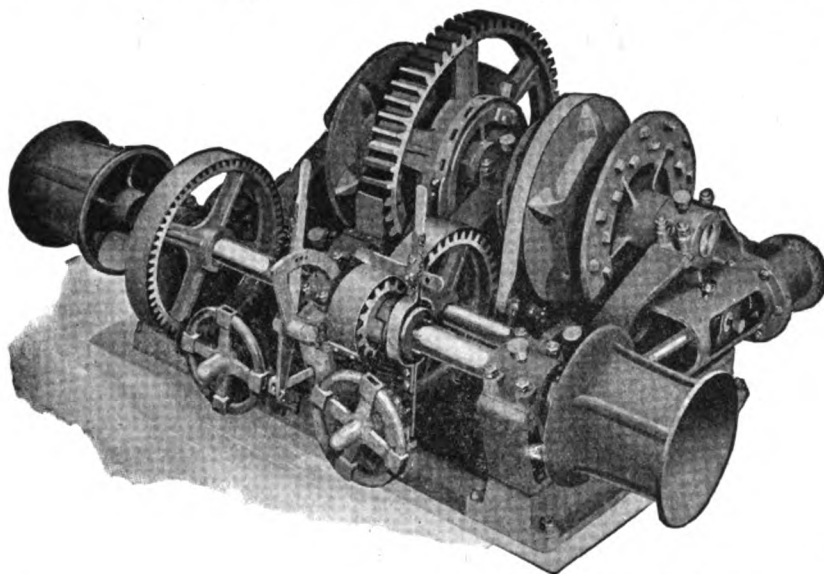
| Month | —Entrances— | | —Clearances— | |
|--------------|--------------|----------------|--------------|----------------|
| | No. ships | Net tonnage | No. ships | Net tonnage |
| May, 1926 | 138 | 376,720 | 112 | 351,123 |
| April | 149 | 434,866 | 130 | 370,158 |
| March | 139 | 371,793 | 128 | 305,105 |
| February | 119 | 363,875 | 111 | 306,161 |
| January | 130 | 381,785 | 115 | 335,041 |
| December | 149 | 392,707 | 109 | 310,852 |
| November | 181 | 398,459 | 123 | 337,483 |
| October | 261 | 365,552 | 183 | 268,611 |
| September | 115 | 284,493 | 205 | 259,437 |
| August, 1925 | 161 | 344,646 | 160 | 295,220 |

San Francisco

(Exclusive of Domestic)

| Month | Entrances | | Clearances | |
|-----------------------|-----------|-------------|------------|-------------|
| | No. ships | Net tonnage | No. ships | Net tonnage |
| June, 1926 | 142 | 561,774 | 100 | 419,036 |
| May | 154 | 605,068 | 116 | 428,814 |
| April | 155 | 583,821 | 167 | 602,680 |
| March | 144 | 571,040 | 135 | 511,010 |
| February | 133 | 506,778 | 134 | 506,317 |
| January | 154 | 544,882 | 139 | 528,315 |
| December | 135 | 532,691 | 153 | 593,556 |
| November | 124 | 491,579 | 142 | 547,770 |
| October | 138 | 517,798 | 136 | 511,844 |
| September, 1925 | 135 | 487,872 | 144 | 535,300 |

The "Superior" Spur Geared Windlass



WE ALSO BUILD

Windlasses
Steering Gears
Capstans
Gypseys
Winches
Hoisting Engines
Swinging Engines
Power Pawl Posts
Dredge Deck Engines
Anchor Hoists
Scow Winding Gears
Drill Frame Hoists
Suction Pipe Hoists
Steel and Wooden Derricks

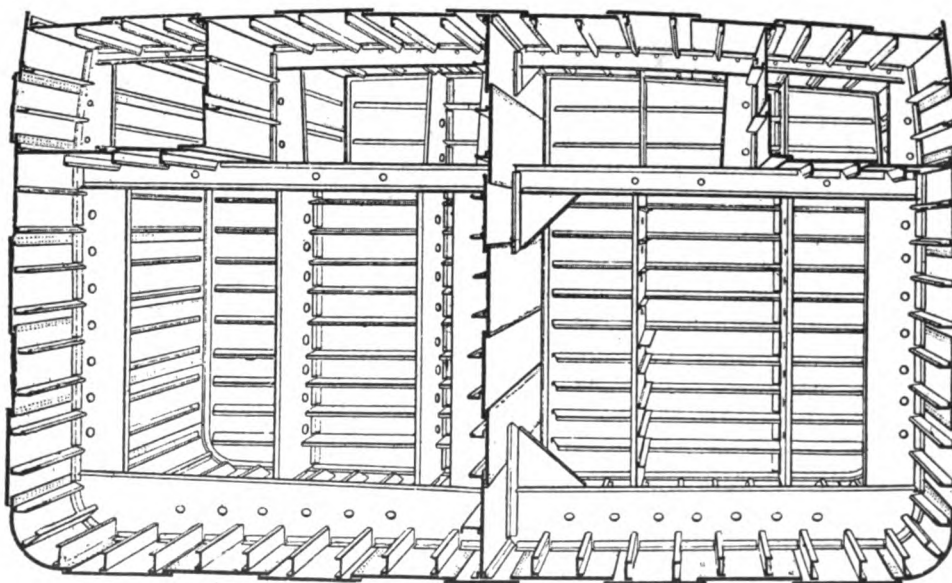
Manufacturers of
Steam and Electrical Machinery
SUPERIOR IRON WORKS COMPANY
SUPERIOR, WISCONSIN

Progress in Oil-Tank Ship Construction

THE "BRACKETLESS—SYSTEM"

(PATENTED)

Eliminates Bulkhead Brackets. Eliminates Bulkhead Leakage. Greatly simplifies construction. Greatly reduces cost of upkeep and cost of damage repairs. Greatly reduces cost of cleaning tanks. Substantially increases the longitudinal strength beyond the well-tried "Isherwood System."



For Particulars Apply

Sir Joseph W. Isherwood, Bt.

17 Battery Place, New York and
4, Lloyd's Avenue, London, E.C. 3

Please mention MARINE REVIEW when writing to Advertisers

Late Decisions in Maritime Law

Legal Tips for Shipowners and Officers

Specially Compiled for Marine Review

By Harry Bowne Skillman

Attorney at Law

UNDER the rule of reasonable care and prudence, a tug towing a barge not built or shaped to withstand heavy seagoing buffeting could not take large chances as to bad weather in coming up the Atlantic coast in December, it was held in the case of *MERCURY*, 2 F. (2d) 325; and it is a duty of navigators of a tug with a barge in tow to look for storm signal flags, particularly where the barometer has for some time been dropping rapidly.

A FURNISHER of coal, it was decided in the case of *Carr v. George E. Warren Corp.*, 2 F. (2d) 333, which was actually purchased on the credit of certain steamers, billed to them, and used by them, had a lien for the same, though it was all delivered on a pier where they customarily coaled; one who furnished tubes for repair of a steamer on her credit, which was delivered to and used by her, though they were billed to the owner, was also entitled to a lien.

IT WAS held in the case of *PEERLESS*, 2 F. (2d) 395, that is is a breach of the condition of a demise charter of a barge requiring it to be returned in good condition, except for ordinary wear, to return it in such good condition, but subject to a lien for the cost of repairs.

UNDER the English as well as the American law, it was declared in the case of *SUSANA*, 2 F. (2d) 410, a stipulation given for release of the ship seized in a suit in rem for the enforcement of a lien is a substitute for the ship, and the lien is transferred to it, and the ship released therefrom.

DISABILITY of a pilot during a part of the time of his employment under a time contract did not authorize deduction from his wages, where he was not called on for service during that time, and it did not interfere with the performance of any duty required of him.—*Lent Traffic Company v. Gould*, 2 F. (2d) 544.

WHILE it is true that a tug with a heavy and cumbersome tow is held to a degree of care commensurate with the risk, or, as some authorities seem to hold, to a high degree of care, or extreme care, to avoid danger of collision, it is also a rule of general application that, as between a steamer and a tug, although drawing a cumbersome tow, it is a duty of the steam-

er to keep out of the way of the latter, and to exercise extra precaution to avoid collision.—*MAINE*, 2 F. (2d) 605.

A CONSIGNEE, who was, on the arrival of a cargo and at all times thereafter, ready, willing, and able to unload the cargo, but was prevented from so doing by the seller's refusal, acquiesced in by the owner of the towboat which had towed the lighters tending the cargo, to permit the consignee to unload until payment of the invoice price, was not liable to the owner of the towboat for demurrage and damages caused by delay; demurrage is allowed, it was held in the case of *Little v. One Cargo of Lumber*, 2 F. (2d) 608, against the consignee, where he by his acts in refusing delivery, caused the delay.

THAT one of two vessels is privileged and entitled to keep her course does not excuse her for failing to observe the rules, for inattention to signals or failure to answer where an answer is required, or for not adopting such precautions as may be necessary to avoid a collision, it was decided in the case of *WEST HARTLAND*, 2 F. (2d) 834. There can seldom be a collision in the open sea and in clear weather, it was said, where there is no obstruction and the vessels are plainly visible to each other for a long distance, without fault on the part of both of the vessels; and it was held that the privileged of two steamships approaching each other on a clear night in Puget sound on crossing courses was in fault for a collision, where for a considerable time before the collision she was in doubt as to the course of the other vessel, but gave no danger signals, and after signalling her intention to keep her course and speed reversed full speed astern without warning.

WHERE a cargo of lumber was damaged because of the vessel's unseaworthiness, and was discharged before reaching its destination to permit of necessary repairs to the vessel, which was seized and sold, requiring the sale of the cargo at a loss, the owner of the cargo was entitled to a maritime lien against the vessel for the loss sustained.—*RICHMOND*, 2 F. (2d) 903.

A STEAMSHIP was held in fault in the case of *SOUTHWAY*, 2 F. (2d) 1009, for collision with boats, properly moored to a stakeboat in a fog, for not anchoring when the fog became so dense that it was im-

possible to see for any distance; each vessel in a flotilla moored to a stake boat in anchorage grounds in a fog is required to give fog signals.

ONE furnishing supplies to a vessel on the orders of a purchaser from the Shipping Board, with knowledge that the contract was one of conditional sale and the purchase price had not been paid, was charged with the duty of inquiring as to the terms of the contract, and acquired no lien where the contract expressly prohibited the purchaser from imposing liens.—*Frey & Son, Inc. v. United States*, 1 F. (2d) 963.

A DREDGE employed in deepening channels in navigable water is a "vessel," and persons employed thereon are "seamen," within the meaning of the Federal law giving a lien for wages, according to the decision in the case of *HURRICANE*, 2 F. (2d) 70; and the foreman in charge of the work of a dredge, under direction of a superintendent, is not a "master," but a "seaman," and also entitled to a lien for his wages.

THE right of a shipowner to proceed under the maritime law to limit his liability to the value of the vessel is not subordinate to the right of an injured seaman to maintain an action at law to recover damages for injuries. These rights are independent and are in some respects concurrent, but with respect to a final decree, limiting the liability of the shipowner, the maritime law is paramount.—*Charles Nelson Co. v. Curtis*, 1 F. (2d) 774.

A PROVISION in bills of lading that the carrier shall not be liable for "any loss or damage caused by prolongation of the voyage," it was decided in *Florida Grain & Elevator Co. v. United States Shipping Board Emergency Fleet Corp.*, 3 F. (2d) 314, is intended to protect it from liability for accidental delay, and does not exempt it from liability for the effect of delay caused by its own default or negligence or that of its agents. The court further held that where corn shipped under a contract of sale at the port of destination was damaged in transit through the fault of the carrier, the buyer refused to accept it and it was sold for the account of the seller, the measure of his damages recoverable from his carrier was the difference between the contract price and the price received, with interest, and incidental expenses incurred.

*A wet sheet and a flowing sea,
A wind that follows fast,
And fills the white and rustling sail,
And bends the gallant mast.*

Old Song.

SHE can ride out any blow if tight and staunch—and to make and keep seams tight Stratford Oakum is used the world over.

There are many reasons why most sailormen prefer

STRATFORD OAKUM

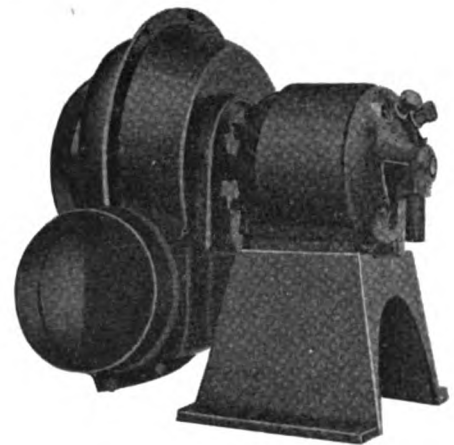
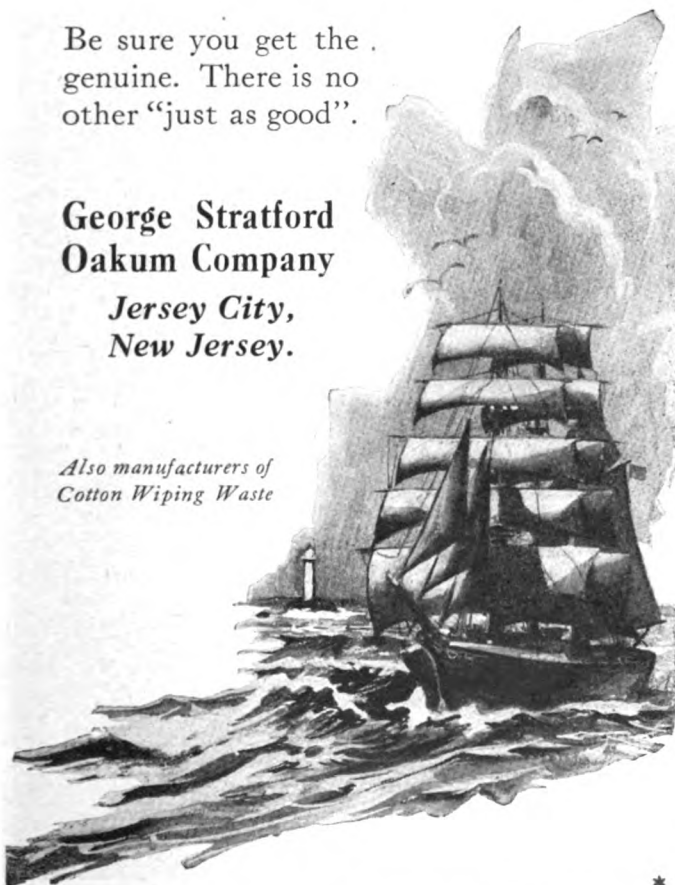
Above all, of course, is the fact that seams caulked with Stratford Oakum stay *tighter longer* than with any other material. And Stratford Oakum works easier so that caulking time is lessened and labor costs reduced.

Nearly a century of service is the distinguishing record of Stratford Oakum.

Be sure you get the genuine. There is no other "just as good".

**George Stratford
Oakum Company**
*Jersey City,
New Jersey.*

*Also manufacturers of
Cotton Wiping Waste*



Keep One Of These Fans In The Stock Room !

Every ship building and ship repair plant needs one of these convenient ventilating fans to keep up the efficiency of the men when they are working in confined spaces.

In double bottom tanks where burning and riveting give off objectionable gases, or on any part of a ship where air does not get a chance to circulate freely, this handy fan will drive out the stifling air and keep cool fresh air in circulation.

The Sturtevant Portable Ventilating Fan is ruggedly yet lightly built, can be easily carried to any part of the ship and set to work immediately. It can be operated for very small cost and comes complete with standard AC or DC drive. If desired, gas engine drive can be supplied for use wherever electricity is not available.

Keep one or two of these fans in the stock room so that your men can use them whenever the occasion arises. We will gladly send you further information and prices of this fan. Send back the coupon below.



**HYDE PARK
BOSTON, MASS.**

**B. F. Sturtevant Company
Hyde Park, Boston, Mass.**

Dept. PVS

Please send along further information and price of the Sturtevant Portable Ventilating Fan. Gas Engine drive. Motor drive AC-DC.

Name

Address

City..... State.....

1591

Please mention MARINE REVIEW when writing to Advertisers

Late Flashes On Marine Disasters

Brief Summaries of Recent Maritime Casualties—
A Record of Collisions, Wrecks, Fires and Losses

| NAME | DATE | NATURE | PLACE | DAMAGE RESULTING | NAME | DATE | NATURE | PLACE | DAMAGE RESULTING |
|--------------------|------------|---------------|--------------------|-------------------|----------------------|----------|------------------|--------------------|--------------------|
| Arkansas | Mar. 20 | Disabled | Balboa | Leaking | Leise Maersk | Mar. 17 | Disabled | Boston | Steering gear |
| Arago | Mar. 21 | Struck obj. | Turning Basin | Propeller | Laleham | Mar. 31 | Abandoned | Not stated | Sinking |
| Aymeric | Feb. 28 | Collision | Off Cape Yesan | Not stated | Lisa | Mar. 12 | Collision | Not stated | Bowsprit |
| Angouleme | Mar. 5 | Collision | Rotterdam | Damaged | Louis L. D. | Mar. 19 | Collided pier | Havre | Plates |
| America | Mar. 11 | Fire | New York | Considerable | Laura Maersk | Mar. 25 | Hvy. weather | Not stated | Propeller |
| Ariadne | Mar. 18 | Collision | Ymuiden | Badly | Majestic | Mar. 13 | Collision | Not stated | Not stated |
| Antonis | Mar. 22 | Collided dock | Barry | Propeller | Madinina | Mar. 16 | Fire | Antilla | Total loss |
| Adder | Mar. 22 | Collision | Not stated | Stern | Monroe | Mar. 27 | Aground | Miami Channel | Not stated |
| Andrew | Mar. 26 | Sank | Upper Mersey | Not stated | Max Horton | Mar. 27 | Abandoned | St. Johns | Not stated |
| Armistice | Mar. 26 | Ashore | s. w. Miquelon | Not stated | Mukilteo | Mar. 25 | Aground | Miami | Floated |
| Appalachee | April 9 | Disabled | St. Johns | Steering gear | Millie | April 2 | Sank | Miami Beach | Raised |
| Barge 786 | Mar. 14 | Sank | Off Peaked Hill | Leaking | Monongahela | Mar. 3 | Fire | Port Arthur | Considerable |
| Bermuda | Mar. 19 | Not stated | New York | Deck; plates | Mouette | Mar. 4 | Stranded | Arcachon | Floated |
| Belleplaine | Mar. 26 | Collision | Narrows | Stem | Marigo L. | Mar. 4 | Aground | No. of Funon | Floated |
| Bedeftell | Mar. 26 | Collision | Narrows | Not stated | Montecristo | Mar. 8 | Collision | Porto Ferrairo | Not stated |
| Barrhill | Mar. 5 | Collision | Rotterdam | Not stated | Madre | Mar. 6 | Wrecked | Palermo Harbour | Not stated |
| Broadgarth | Mar. 3 | Collision | King's Dock | Not stated | Madame Doretta | Mar. 25 | Collision | Goole Reach | Stem |
| Cecil Junior | Mar. 23 | Abandoned | Not stated | Lost prop. | Noorderdijk | Mar. 13 | Disabled | London | Engine; feed pumps |
| Commercial Spirit | Mar. 25 | Disabled | Not stated | Engine | Nellie Murray | Mar. 22 | Fire | Bridgeport | Not stated |
| Caigowan | Mar. 22 | Disabled | Halifax | Propeller | Nantucket | Mar. 30 | Aground | Off Tybec | Floated |
| Claremont | Mar. 31 | Foundered | Acalon L. S. Sta. | Not stated | Nugget | Mar. 4 | Stranded | St. Nicholas Rocks | Not stated |
| Clan Mackinlay | Mar. 2 | Collision | Malta | Starboard side | Nicola | Mar. 4 | Aground | Off Anzio | Not stated |
| Cuyaba | Feb. 28 | Collision | Not stated | Floated | Orenie | Mar. 3 | Aground | Aberystwyth | Not stated |
| Chojun Maru | Mar. 8 | Collision | Not stated | Bow | Oregon | Mar. 8 | Collision | Aberdeen | Leaking |
| Caledonia | Mar. 11 | Ashore | Kingston | Bows | Oriole | Mar. 22 | Collision | New Orleans | Badly |
| City of Winchester | Mar. 12 | Collision | Thames | Forepeak | President Polk | Mar. 16 | Fire | Brooklyn | Not stated |
| Cavalaire | Mar. 16 | Abandoned | Saint Marie | Floated | Point Lobos | Mar. 17 | Fire | Tampa | Upper wks. |
| Cornish Coast | Not stated | Collision | Swansea | Bow | Pacific | Mar. 20 | Ashore | Diamond Reef | Floated |
| Colorado | Mar. 22 | Ice | Sydney | Forepeak | Primrose | Mar. 6 | Collision | Fowey | Not stated |
| Chartered | Mar. 16 | Collision | Fountain Drydock | Floated | Parrakis L. Cambanis | Mar. 11 | Ashore | Cape Henry | Floated |
| Corstar | Mar. 21 | Collision | Barry | Bow | Paparoa | Mar. 17 | Fire | Cape Town | Abandoned |
| Dayton | April 1 | Hvy. weather | Belle River | Starbd. side | Porto Di Suez | Mar. 15 | Stranded | Sliton | Not stated |
| Daina | Mar. 5 | Ashore | Off Zeebrugge | Total loss | Protos | Mar. 17 | Aground | Sulina | Floated |
| Deighton | Mar. 12 | Collision | Thames | Damaged | Queensferry | Mar. 10 | Collision | Garston Channel | Starboard side |
| Drake | Mar. 11 | Aground | Oporto | Not stated | Roadl Jarl | Mar. 18 | Ashore | Copenhagen | Floated |
| Denbighshire Lass | Mar. 18 | Foundered | Off Smalls | Leaking badly | Rodi | Mar. 22 | Aground | Spalata | Not stated |
| Eastern City | Mar. 15 | Aground | Nuevitas | Leaking | Rubislav | Mar. 26 | Collision | Hamburg | Starboard side |
| Edna Hoyt | Mar. 22 | Disabled | Bermuda | Leaking | Sea Wolf | Mar. 13 | Collision | Not stated | Not stated |
| El Occidente | Mar. 24 | Fire | Key West | Not stated | Stanwood | Mar. 11 | Aground | Off Avon | Floated |
| Eidsborg | Mar. 25 | Collision | St. John | Plates | Stad Zaltbommel | Mar. 27 | Aground | Havana | Not stated |
| Ether Weems | Mar. 28 | Aground | Miami | Floated | Supportco | Mar. 27 | Collision | New York | Damaged |
| Edith | Mar. 2 | Gale | River Tees | Sank | Siam | Mar. 27 | Collision | New York | Damaged |
| Fylingdale | Mar. 18 | Aground | Pensacola Harbor | Floated | San Francisco | Mar. 25 | Fire | Wilmington | Considerable |
| Frank C. Osborn | April 5 | Sprang leak | Detroit | Not stated | Saxon | Mar. 1 | Sank | Princes Pier | Raised |
| Fulton | April 4 | Collision | Off Constable | Consicerable | Shinyei Maru | Feb. 28 | Collision | Off Cape Yesan | Leaking |
| Ferm | Mar. 4 | Aground | Hook | Floated | Sureway | Mar. 3 | Collision | King's Dock | Not stated |
| Friesland | Mar. 8 | Ashore | Niquero | Floated—badly | St. Kenneth | Mar. 4 | Aground | Falmouth | Floated |
| Fagernes | Mar. 18 | Collision | Bratholmen | Sank | Sunray | Mar. 3 | Dam. by ice | Nr. Nicolaieff | Plates; forepeak |
| Framlington Court | Mar. 17 | Fire | Scarpather Light | Not stated | Sierra | Mar. 3 | Fire | San Pedro | Considerable |
| Flag | Mar. 22 | Collision | Adelaide | Gunwale | Sucrosa | Mar. 8 | Aground | Philadelphia | Floated |
| Grifco | Mar. 17 | Ashore | Not stated | Floated-fore-peak | Strabo | Mar. 11 | Aground | Scheldt | Floated |
| General | Mar. 21 | Sank | Cape Lazo | Leaking | Skra | Mar. 11 | Aground | Nr. Vostizza | Not stated |
| Garth Castle | Mar. 26 | Struck rock | Kill von Kull | Stern; bear | Stolwijk | Mar. 18 | Aground | Cagliari | Not stated |
| Genoa | April 1 | Hvy. weather | English Bay | Mooring chain | Snowdon | Mar. 17 | Fire | Karachi | Bunkers |
| Golly | Mar. 2 | Collision | Belle River | Abandoned | San Antonio | Mar. 22 | Collision | New Orleans | Not stated |
| Glencona | Mar. 1 | Fire | Malta | Floated—forepeak | Sapper | Mar. 24 | Collision | Off Rotherhithe | Not stated |
| Goteborg | Mar. 2 | Aground | n. w. of Skerries | Abandoned | Swynfleet | Mar. 25 | Collision | Goole Reach | Port side |
| General Smuts | Mar. 5 | Sinking | nr. Lysagrund | Not stated | Sumatra Maru | Mar. 25 | Fire | Colombo | Not stated |
| Giuseppe Solimano | Mar. 4 | Stranded | Not stated | Abandoned | Seal | April 10 | Explosion | Off Baccalieu | Sank |
| Giulia | Mar. 7 | Collision | Cornet Reef | Not stated | Thomas Brennan | Mar. 31 | Ashore | Captains Island | Not stated |
| Galatea | Mar. 8 | Stranded | Malta | Damaged | Thann | April 2 | Hvy. weather | Off Cape Ann | Hatches—leaking |
| Goth | Mar. 19 | Fire | Off Palan Sardinia | Not stated | Thraki | Mar. 1 | Fire | Galatz | Not stated |
| Grifco | Mar. 17 | Stranded | Rotherhithe | After cabin | Tilburyness | Mar. 9 | Struck pier | Berwick-on-Tweed | Not stated |
| Gul Djemal | Mar. 17 | Collision | Floated | Deck | Trust Me | Mar. 17 | Struck rock | No. Eyemouth | Ashore |
| Glenshane | Mar. 17 | Fire | Cape Laze | Bulkhead | Tsiropinas | Mar. 18 | Aground | Sulina | Floated |
| Heathpark | Mar. 29 | Not stated | Singapore | Lost prop. | Timavo | April 10 | Disabled | Gibraltar | Rudder |
| Herbert S. Rawding | Mar. 28 | Aground | Portland | Floated | Universe | April 2 | Sank | Off Governors Isl. | Not stated |
| Horaisan Maru | Mar. 4 | Foundered | Miami | Floated | Urakawa Maru | Mar. 20 | Collision | Off Aomori | Not stated |
| Hillcroft | April 7 | Aground | Grays Harbour | Total loss | Viola Henry | Mar. 15 | Sank | Red Hook Flats | Raised |
| Haggersgate | April 6 | Ashore | Little Round Shoal | Floated | Vika | Mar. 27 | Ashore | Nr. Nipe | Floated |
| Isbrytaren II | Mar. 1 | Aground | Off Cape Henry | Floated | Valeureux | Mar. 4 | Stranded | Arcachon | Floated |
| Ita | Mar. 10 | Collision | Oerngrundet | Not stated | Vertrouwen | Mar. 11 | Hvy. weather | n. w. Ymuiden | Damaged |
| Inchbrayock | Mar. 16 | Collision | Garston Channel | Stem | Vechtstroom | Mar. 18 | Collision | Ymuiden | Badly |
| International | April 8 | Ashore | Fountain Drydock | Port side | West Hematite | Mar. 15 | Collision | Galveston | Considerable |
| Julia Luckenbach | Mar. 20 | Aground | Point Reyes | Not stated | William | Mar. 17 | Disabled | Bermuda | Steering gear |
| James H. Prentice | April 1 | Hvy. weather | Mobile | Floated | Windham | Mar. 26 | Aground | Miami | Floated |
| Jobshaven | Mar. 30 | Ashore | Belle River | Rudder; propeller | W. M. Irish | April 1 | Collision | Off Delaware | Not stated |
| Jacob Luckenbach | Mar. 1 | Aground | Sagua la Grande | Floated | Woerdan | Mar. 4 | Collision | Capes | Damaged |
| Kentucky | Mar. 13 | Not stated | Houston Channel | Floated | Wasaborg | Mar. 9 | Struck quay wall | Middlesbro | Rudder |
| Kentucky | Mar. 19 | Fire | St. Johns | Bow; lost rudder | Woolgar | Mar. 12 | Collision | Cape Town | Damaged |
| Kentish Maid | Mar. 12 | Collision | Thames | Considerable | Wilkesden | Mar. 18 | Fire | Newcastle | Bunkers |
| Kaikui Maru | Mar. 20 | Collision | Off Aomori | Damaged | Winsum | Mar. 23 | Struck quay wall | Balboa | Not stated |
| Keskul | Mar. 23 | Stranded | no. co. Pelago | Sank | Yangtse | Mar. 5 | Collision | Royers Sluice | Not stated |
| | | | | Not stated | Yuma | Mar. 8 | Struck bot. | Mississippi River | Ashore—leaking |

Thorkote Has Won

Facts Are The Best Proof of Quality

In the "Leviathan"—the world's largest steamship—THORKOTE was used. As further evidence read this remarkable letter:

UNITED STATES LINES

45 Broadway
New York

March 2, 1926.

Thorkote Products Co., Inc.,
135 Liberty Street, New York, N. Y.

Gentlemen:

When the S.S. "LEVIATHAN" drydocked at Boston in February 1925, the space within the stern tubes that extend between the outer and inner bearings, were cleaned and painted with two coats of THORKOTE paint. Upon arrival of that vessel at the drydock in Boston during February of this year, three of these tailshafts were withdrawn and the condition of the THORKOTE was found to be as good as when applied. This I consider a most remarkable performance. We had tried many different materials for coating this section of the vessel without success.

The propeller shafts average 180 revolutions at sea, and this causes a violent circulation of the water in this locality, usually working the sea water into quite a foam. This we have proven by drawing off water in this location when vessel was at sea, and proves the performance of the THORKOTE to be most satisfactory.

The Chief Engineer of the S.S. "LEVIATHAN" has painted the water boxes of the main condensers with THORKOTE and it has also given satisfactory results in that place.

I believe that you will like to hear the results of your material, especially as it is given without having been asked for, and no motive is attached to giving information other than to assist other superintendents who are troubled with corrosion.—Yours very truly,

W. L. BUNKER,
Superintendent Engineer.

WLB-LJ

THORKOTE

FOR years Steamship Owners and Operators, Engineers and Naval Architects have sought a waterproof covering for Magnesia and other heat insulating materials, which could be easily applied and repaired and which would not be eaten away by rust.

This has finally been found and we offer to those seeking the maximum of efficiency—THORKOTE.

THORKOTE is a plastic material easily applied over insulating materials. It becomes hard shortly after application making an ideal covering for Boilers, Tanks, Feed Water and Oil Heaters, Brine Tanks, and Coolers, Deck Lines, Thermo Coil Heater Housings, etc., etc.

CUT your port fuel charges by insulating your deck steam lines and protect this insulation with THORKOTE.

Deck steam lines in the past have as a general rule been left uninsulated because there was no practical protection for the insulation.

You can now insulate your deck lines, cover with THORKOTE and take advantage of the fuel savings to be derived.

THORKOTE CEMENTS FOR

Tank Tops—Bilges
Fore-After Peak Tanks
Domestic—F-W Tanks
Coal Bunkers—Holds

Tail Shafts—Rudders
Smoke Stacks
Canvas Decks
Standing Rigging

Each branch of insulation especially studied and treated with regard to conditions and requirements.

A LIST OF SATISFIED CUSTOMERS WILL BE FURNISHED ON REQUEST

Thorkote Products Company, Inc. 135 Liberty St.,
New York

AT LAST—An Accurate and Reliable Dial-Pressure Gauge!

Heretofore, it has been impossible to obtain a reliable and accurate dial-pressure gauge which would register a pressure much below 10-lbs. per square inch.

Trade  Mark

DIAL-O-METER

starts registering at 1-inch depth!

(NEGRETTI & ZAMBRA TYPE)

All other liquid type gauges require expert installation and factory service. The McNab Dial-O-Meter can be installed by an ordinary mechanic—the only tool required is a common monkey wrench. One adjustment: Fool-proof;

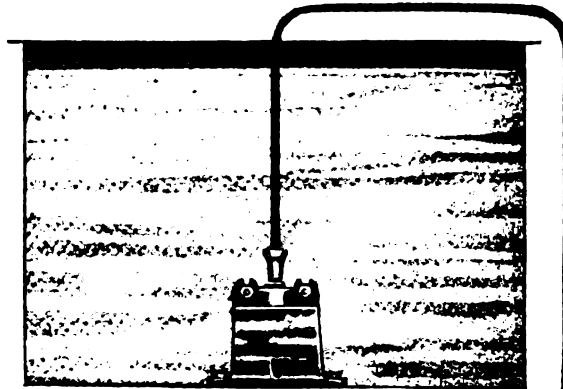
Moisture-proof; Always dependable; Always accurate; For Fuel Oil, Ballast, Water and other tanks. Also for indicating the fore and aft draft of ships in feet and inches. Can be located at any convenient position.

Write for Complete Catalogue and Prices

McNab Corporation Dept. M-5
Yonkers, N. Y.

Special Representatives:
D. E. FORD, 15 Whitehall St., New York; R. L. FRYER, Transportation Bldg., Washington, D. C.; FORD & GERRINE, Balfour Bldg., San Francisco, Cal.

As easy to read as the hands of a clock. A new discovery in the dial type of gauge. Sensitive—Reliable—Accurate, and *always* ready to give that information most necessary on board ship.

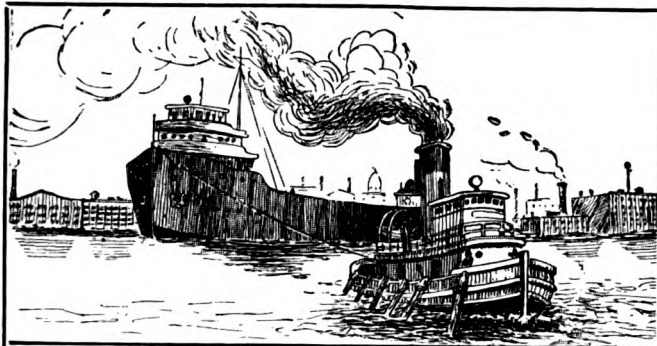


Please mention MARINE REVIEW when writing to Advertisers

Late Flashes On Marine Disasters

**Brief Summaries of Recent Maritime Casualties—
A Record of Collisions, Wrecks, Fires and Losses**

| NAME | DATE | NATURE | PLACE | DAMAGE RESULTING | NAME | DATE | NATURE | PLACE | DAMAGE RESULTING |
|--------------------|----------|--------------------|--------------------|------------------|--------------------------|----------|---------------|----------------------|----------------------------|
| Aladdin | April 20 | Struck | Not stated | Propeller | Ingram | April 26 | Fire | Hamburg | Cargo |
| | | abmd. obj. | | | Infanta Isabel De Borbon | April 7 | Collision | Cadiz | Hold |
| Andalusia | April 22 | Ashore | Kingston | Floated | Jerome | April 20 | Fire | Brooklyn | Slight |
| Athelbeach | April 24 | Fire | Off Terneuzen | Not stated | Jennie | April 15 | Aground | Pluckington Bank | Floated |
| Alcol | Mar. 31 | Collision | Not stated | Hawsepape | John Holt | April 16 | Fire | Harrington Dock | Slight |
| Ansaldto Settimo | April 7 | Fire | San Francisco | Bunkers | J. A. Campbell | May 8 | Aground | Waverly Shoal | Floated |
| Audrey | April 3 | Collision | North Shields | Not stated | Jupiter | May 13 | Collision | Lake Erie | Undamaged |
| Antonio Tripovich | April 8 | Fire | Venice | Not stated | John W. Miller | April 29 | Disabled | Pernambuco | Leaking |
| Anyo Maru | April 6 | Fire | Hong Kong | Slight | Jane Nettleton | May 8 | Disabled | San Francisco | Engine |
| Aeolus | April 8 | Fire | Stockholm | Considerable | Koki Maru | April 16 | Aground | Columbia River | Floated |
| Atlanta City | April 9 | Fire | Manila | Not stated | Kajak | April 26 | Collision | Tore Annunziata | Damaged |
| Amazon Maru | April 12 | Collision | Hamburg | Not stated | Kokness | Mar. 31 | Collision | Riga Bay | Stem, plates |
| Akti | April 13 | Collision | Bosphorus | Plates; frames | Keith Cann | April 8 | Collision | St. John | Damaged |
| Ashburnham | May 7 | Collision | Boston | Port side | Kong Olaf | April 15 | Aground | Egersund | Floated |
| Athens | May 13 | Ashore | Nr. Santa Marta | Not stated | Kent | April 20 | Aground | Suez Bay | Floated |
| Beta | April 13 | Collision | Stapleton | Stern | Lila E. D. Young | April 17 | Disabled | St. Johns | Rudder post |
| Baldbutte | April 17 | Aground | Marcus Hook bar | Floated | | | | | leaking |
| Benita | April 19 | Sprang leak | Off Barnegat | Sank | Little Stephano | April 20 | Leaking | Not stated | Abandoned |
| Benicia | May 2 | Struck canal bank | Nr. Panama | Leaking | Lieutenant | April 7 | Collision | Carron Wharf | Sank |
| Barshaw | Mar. 31 | Struck bank | River Seine | Rudder | Lingam | April 8 | Collision | St. John | Plates |
| Bertie M. Hanlon | April 8 | Struck | San Francisco | Leaking | Lycia | April 13 | Collision | Off Avonmouth | Forward |
| | | abmd. obj. | | | Loos | April 16 | Ice | Baltic | Plates; frames; rudder |
| Bournemouth | April 12 | Aground | Rosario | Not stated | Luise Hemsoth | May 9 | Disabled | Rotterdam | Machinery |
| Bianca | April 29 | Struck buoy | Grimshy | Prop. blades | La Marseillaise | May 11 | Ashore | Salmeduna | Floated |
| Breaksea Lightship | April 29 | Collision | Not stated | Port bow | Lake Frenchton | May 10 | Ashore | Proctor Rock | Floated |
| Corona | May 22 | Fire | Toronto | Not stated | Mexico | April 13 | Fire | New York | Not stated |
| Covalt | May 5 | Ashore | Gray's reef | Floated | Minnie Ella | April 19 | Ashore | Parque Island | Not stated |
| Cerro Ebano | April 13 | Collision | Stapleton | Not stated | Mary K | April 23 | Fire | New York | Slight |
| Columbian | April 17 | Struck | Panama | Propeller | Mojave | April 24 | Aground | Presideo Shoal | Floated |
| | | abmd. obj. | | | Maiella | April 3 | Fire | Trieste | Not stated |
| City of Leicester | April 21 | Fire | Malta | Not stated | Meg Merrilies | April 10 | Collision | N. of Bar Light-ship | Plates; bulwarks |
| Corsica | April 21 | Ashore | Packet Ledge | Floated-bottom | Manx Isles | April 8 | Fire | New Orleans | Plates; decks; up. struct. |
| Chiton | April 18 | Ashore | Little Curacao | Floated | Maxis | April 15 | Aground | Off Granite Wharf | Not stated |
| Clairton | April 27 | Collision | Off Shieldhall | Bows | Morawitz | April 15 | Aground | Buenos Ayres | Not stated |
| Clam | Mar. 29 | Collision | Erie Basin | Not stated | Moordowl | April 30 | Collision | Off Shieldhall | Bows |
| Corvus | Mar. 29 | Collision | Erie Basin | Not stated | Murex | April 29 | Struck wall | Liverpool | Not stated |
| Carron | April 7 | Collision | Carron Wharf | Not stated | Mureas | April 30 | Fire | Glasgow | Slight |
| Carmen Millan | April 7 | Collision | Cadiz | Not stated | Marvel | April 30 | Aground | Langesund | Floated |
| Chios | April 9 | Ashore | Sulina | Floated | Mulhouse | April 30 | Disabled | St. Pierre | Rudder |
| Canadian Victor | April 8 | Collision | St. John | Not stated | North American | May 2 | Collision | Holland | Not stated |
| Casmona | April 12 | Fire | Rosario | Engine-room | Nairn | April 8 | Ashore | Pentland Firth | Floated-bow |
| Chiton | April 15 | Ashore | Little Curacao | Not stated | Norfolk | April 12 | Collision | Willemstad | Undamaged |
| Carrier | April 14 | Collision | Empress Dock | Not stated | Nile | May 3 | Aground | New Bedford Harbor | Floated |
| City of Sarnia | May 11 | Struck buoy | Port Huron | Wheel | Ontario | April 22 | Fire | Halifax | Not stated |
| Charlotte | April 29 | Collided gate | Holtenau | Considerable | O. T. Waring | April 8 | Explosion | New Orleans | Considerable |
| Dorothy Alexander | April 28 | Struck | St. Johns River | Propeller | Oldfleet | April 15 | Collided pier | Ramey Harbour | Plates |
| | | abmd. obj. | | | Oostkerk | April 28 | Stranded | Blenheim Bank | Floated |
| Dorothy Luckenbach | May 3 | Collision | Delaware Brkwr. | Port blkhd. | Oosterland | April 30 | Aground | Harlingen | Floated |
| Dago | April 9 | Collided dock wall | Hull | Damaged | Progress | April 22 | Struck bot. | Bar Point | Rudder |
| Diamond O | April 12 | Fire | Portland | Total loss | Panama | April 27 | Collision | Port au Prince | Not stated |
| Dazzle | May 6 | Collision | St. Johns | Bowsprit | Plasworth | April 13 | Collision | Newcastle | Not stated |
| Diebergen | April 19 | Aground | Leighorn | Steer, gear | Priscilla | May 4 | Disabled | North Island Har. | Leaking |
| Deansway | April 20 | Disabled | Nr. Pendeen | Engine | Petrolaine | April 28 | Disabled | Ponta Delgada | Feed pumps |
| Eurana | April 27 | Struck bank | Panama Canal | Not stated | Quedoc | May 5 | Aground | Soo River | Floated |
| Everett | April 28 | Aground | Des Moines | Floated; slight | Roseway | April 26 | Disabled | Not stated | Pumps-leaking |
| Evelyn Sears | May 1 | Aground | Bird Island Flats | Floated | | | | | Abandoned |
| Enchantress II | April 8 | Fire | Maracaibo | Sank | Rassapeague | May 12 | Fire | Not stated | |
| Ferrington Court | May 5 | Ashore | Ocean View | Floated | South American | May 2 | Collision | Holland | Not stated |
| Edna | April 14 | Collision | Empress Dock | Rudder | Steel Scientist | April 15 | Ashore | Nr. Porto Bello | Floated |
| Elmbay | May 12 | Ice | Off Port Colborne | Wheel | Steel Voyager | April 16 | Fire | Kobe | Considerable |
| Elena | April 19 | Foundered | Amantea | Slight | Silverado | April 22 | Fire | Portland | Slight |
| Ester | April 20 | Aground | Gelle | Total loss | Salvare | May 3 | Collision | Delaware Brkwr. | Port bulk-heads |
| Eugenio Dutrus | April 29 | Not stated | Gibraltar | Propeller | Schoharie | April 7 | Fire | At Sea | Not stated |
| Eastern Moon | May 13 | Disabled | Ea. of Sydney | Bottom | Susan A Moran | May 6 | Aground | Miami | Floated |
| F. B. Squires | April 16 | Ice | Fairport | Engine | Suderoy | May 6 | Ice | Nr. Halifax | Plates |
| Fernfield | April 13 | Disabled | Sheet Harbor | Damaged | Sten | April 28 | Aground | Middlesbro | Floated |
| Farnworth | April 26 | Collision | Torre Annunziata | Holed | Triguena | April 12 | Collision | Willemstad | Sails; hull; rigging |
| Ferlo | Mar. 31 | Collision | Bristol | | | | | | |
| Genevieve | April 10 | Struck bridge | Hillsborough River | Sank | Tokiwa Maru | April 9 | Stranded | Chinchu Harbour | Bottom |
| Greta | April 15 | Ashore | Off Vera Cruz | Floated | Tricolor | April 17 | Fire | Greenwich Buoy | Considerable |
| Granite | April 15 | Disabled | Boston | Leaking | Tacomia Maru | April 18 | Collision | Nr. Swatow | Not stated |
| Gansfjord | April 24 | Ashore | South Pass | Floated; leaking | True Vine | April 30 | Stranded | Boulmer Shiel | Floated |
| Glenrig | May 5 | Struck | Detour point | Ashore | Uskmouth | April 7 | Collision | Penarth | Plates |
| Glenmavis | May 6 | Struck | Lachine Canal | Rudder | Uskhaven | April 29 | Collision | Not stated | Not stated |
| Gulf of Venezuela | April 12 | Explosion | Port Arthur | Considerable | William N. Page | April 22 | Aground | Kedges Straits | Floated |
| Gellivare | April 13 | Collision | Newcastle | Not stated | Westmount | May 10 | Ice | Ashland | Wheel |
| Graig | May 8 | Disabled | Rio Janeiro | Leaking | William A. Reiss | May 13 | Collision | Lake Erie | Plates; hawse pipe |
| Grace Stevens | May 9 | Ashore | Off Iron Point | Floated | | | | | Undamaged |
| Grace Dollar | April 19 | Fire | San Francisco | Not stated | Yeni-Istamboul | April 13 | Collision | Bosphorus | Not stated |
| George L. Torian | April 29 | Hvy. weather | St. John's | Damaged | Yat Shing | April 18 | Collision | Nr. Swatow | Bows |
| Henri Desmarais | April 21 | Collided quay | Nantes | Considerable | York | April 30 | Collision | Terneuzen Sluice | Stern |
| Horatio G. Foss | April 27 | Collision | Port au Prince | Slight | Zampa | April 20 | Ashore | Honolulu | Not stated |
| Hampton Roads | April 30 | Ashore | Off Livingstone | Floated | | | | | |
| Hillcroft | April 7 | Ashore | Chatham | Floated | | | | | |
| Hydrus | May 7 | Ice | Buffalo | Wheel; quadrant | | | | | |
| Henry Cort | May 12 | Ice | Lorain | Damaged | | | | | |
| H. A. Rock | May 13 | Ice | Buffalo | Wheel | | | | | |
| Howick Hall | May 13 | Collision | Nr. Romer Lghth. | Grounded | | | | | |



YOU LEAVE PORT

With a feeling of satisfaction when the vessel is furnished with Supplies that you can depend on.

That is the kind we have been delivering to the boats on the great lakes for over 80 years.

Our General Catalog No. 111 should be in the hands of every vessel owner or operator.

Forwarded on application.

GEO. B. CARPENTER & CO.

MARINE SUPPLIES

436 No. Wells St. Chicago

JERGUSON

Engineering Specialties

REFLEX WATER GAGES

Used on all types of boilers by all the Principal Navies of the World

"THE WATER SHOWS BLACK"

ADVANTAGES:

Quick and reliable observation of the water level. Safe, sure and durable at high pressures. Not affected by cold air drafts. Most effective protection against injuries to boilers and workmen. Easily applied to all types of gage glass fittings.

When filled with WATER the Reflex Gage always appears BLACK. When empty it instantly shows WHITE. No mistake possible. This feature alone is worth many times the cost of the Reflex.

Send for catalog of Water Gage Apparatus.

MANUFACTURED BY THE

JERGUSON GAGE & VALVE CO.

WINTER HILL, SOMERVILLE, MASS.



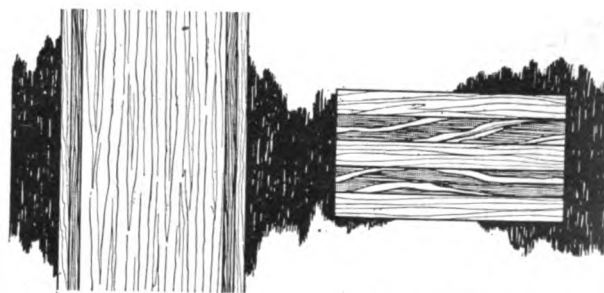
**Permanent
light-weight
Construction
at Low Cost.**

Weldwood

Layers of wood welded together with a water resistant cement.

The ideal material for bulkhead construction, door panels, ceilings, walls and drawer bottoms. Will not buckle or warp, stands by itself, requires no backing. Needs one-third less paint than composition material, by actual test.

WELDWOOD is made by the largest manufacturer of plywood. Naval architects can choose from large stocks at New York and Detroit—quick deliveries from stock.



5-ply construction of Weldwood in hard woods. Welded with same water resistant cement used in U. S. Aircraft propeller construction.

5-ply construction of Weldwood in soft woods. Welded with same water resistant cement used in U. S. Aircraft propeller construction.

Catalogue and price list on request.

**UNITED STATES
PLYWOOD COMPANY, Inc.**

**603-07 West 36th St.
New York, N. Y.**

Please mention MARINE REVIEW when writing to Advertisers

New Trade Publications

BOILER TESTS—To bring to mind of boiler users the thoroughness of tests to determine efficiency of furnaces and boiler, the Combustion Engineering Co., New York, has issued a booklet covering a report of evaporation tests on boiler equipment at the River Rouge plant of the Ford Motor Co. Equipment used in the test is illustrated, interior of the plant is pictured and four tables cover 11 separate tests. Changes to be made in the equipment by the company to meet conditions shown by the tests are also shown.

HERRINGBONE SPEED REDUCERS—Much detailed information as to speed reducers in general and its own type in particular is included in a catalog by the Falk Corp., Milwaukee. Standard and special types are illustrated, with the flexible coupling developed by this company. Dimension tables, data sheets and blueprints of various types complete the subject matter.

ARC WELDER—Northwestern Mfg. Co., Milwaukee, has issued a bulletin describing its arc welder in which stabilization of the current is attained by internal means, giving a steady arc. Diagrams illustrate the wiring and arrangements of the welder.

LIFT TRUCK PLATFORMS—A bulletin by

the Lewis-Shepherd Platform Corp., Boston, features its steel leg lift platforms, all-steel box type platforms and other devices for convenient handling of materials.

FIRE OBSERVER—A device to allow inspection of the interior of a furnace to aid in gaining efficiency in combustion is shown in a bulletin by the Vastine Sales Corp., Chicago. Comfort to the inspector is assured and no cold air is allowed to enter the furnace, thus improving combustion results. Application to various types of furnaces is shown.

PIPE—Facts about pipe and its manufacture, with a few statistics relating to sizes, weights and other dimensions make up ten small papers in a folder by the Youngstown Sheet & Tube Co., Youngstown, O.

LIFT TRUCKS—Under the title "How to Pile," the Revolver Co., Jersey City, N. J., describes its portable elevators, lift trucks and barrel racks in an illustrated bulletin. Applications of the various devices to specific uses are shown.

ELECTRIC HOISTS—Floor operated hoists manufactured by the Shepard Crane & Hoist Co., Montour Falls, N. Y., are given full description in a catalog just published. Each type is described fully, an installation is pre-

sented in illustration and comprehensive data covers the mechanism.

PUMPS—Various pumps, turbines, valves and screens produced by the D'Oiler Centrifugal Pump & Machine Co., 165 Broadway, New York, engineer and manufacturer, are illustrated and briefly described in a new 4-page circular.

OIL ENGINES—Oil engines for marine use are described in a catalog issued by the Bates & Edmonds Motor Co., Lansing, Mich. In these pamphlets are shown the sketches and specifications for various types and styles of engines manufactured by that company. In addition to marine engines, electric generators, air compressors and pumps are described and pictured.

WELDING—An electric arc welded structural steel building erected by the Chicago, Burlington & Quincy railroad at Eola, Ill., is described in a booklet recently issued by the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

CENTRIFUGAL PUMPS—The Pennsylvania Pump & Compressor Co., Easton, Pa., has issued a folder describing the various parts of a centrifugal pump of its manufacture.

ARC WELDING—A resume of the uses and value of automatic arc welding and a description of apparatus and generating equipment are given in a bulletin by the General Electric Co., entitled Automatic Arc Welding. It contains 20 pages and is illustrated by halftones of equipment and actual applications.

Business News for the Marine Trade

Lauderdale Transportation Co., Fort Lauderdale, Fla., has been incorporated with \$100,000 capital to operate freight schooners between Fort Lauderdale and Brunswick, Ga., by Peter P. Cappel, 72 Bowery, New York.

Fort Pierce Navigation Co. is being formed and will be incorporated by C. E. Cahow, box 568, Fort Pierce, Fla., to operate boats and barges from ports on the south Atlantic seaboard to Fort Pierce.

Lopez Stevedoring Co. has been incorporated at New York with 200 shares no par value by L. Lifton, M. Voha and J. Heller. J. J. Tashof, 32 Broadway, is attorney.

Great Lakes & Oceanic Steamship Co. has been incorporated at Cleveland, with \$500 capital by John P. Ferencik, Matthew J. Brugge, Nicholas J. Kiraly, Charles N. Krieg and Michael L. Sammon.

Terminal Operating Co. has been incorporated at Miami Beach, Fla., to conduct a stevedoring business by W. H. Pierce, care William Hewitt, Northwest Seventh street, Riverside Farms.

Petroleum Navigation Co. has been incorporated at Houston, Tex., with \$100,000 capital, to operate steamship lines, by T. E. Buchanan, 1506 Lamar street.

Lauderdale Navigation Co., Fort Lauderdale, Fla., has been incorporated with \$25,000 capital by C. M. McCune, and C. H. Landefeld.

Baltimore & Tampa Steamship Co., Baltimore, Md., has been incorporated with \$150,000 capital by Thomas E. Cottman, 800 Keyser building.

F. B. Walker, New York, has been incorporated with \$5000 capital to conduct a stevedoring business, by I. Wilkin, I. Prussin and C. Narod. D. O. Kuh, 152 West Forty-second street, is attorney.

Lake Treba Steamship Co., Mobile, Ala., has been incorporated with \$50,000 capital by Stewart A. LeBanz and J. T. Walsh, 1114 Government street.

New York & Peninsular Steamship Co. has been organized at Tampa, Fla., to transport citrus and other fruits by L. C. Edwards, vice president, 713 Delaware avenue, and others.

Steamship Haulage Co., New York, has been incorporated with \$20,000 capital by R. Kaplan, A. J. Kalmanowitz and M. Adda. Diamond, Abrahams & Straus, 270 Madison avenue, New York, are attorneys.

Upper Mississippi Barge Line Corp., S. S. Thorpe chairman, will receive bids soon for 30 barges and three towboats to be operated on the upper Mississippi river by the Inland Waterways Corp. Plans are being drawn by Cox & Stevens, naval engineers, New York, and T. B. Tarn, naval architect, Pittsburgh.

Stuart Steamship Co., Stuart, Fla., has been incorporated with \$125,000 capital to establish a freight line between New York and Stuart, by Charles F. Hoel, secretary, Asbury Park, N. J., and others.

Inter-Bay Lighterage has been incorporated at New York with \$6000 capital by G. H. Henjes, E. D. Hunter and J. L. Murphy. A. M. Yuzziline, 277 Broadway, New York, is attorney.

T. L. Durocher Co. has been incorporated at Detroit, Mich., to do a general marine contracting business, with \$500,000 capital, by Thomas L. Durocher, Melinda C. Durocher and Walter W. Durocher, Detroit, Mich.

Eastern Chartering Corp., New York, ship brokers, has been incorporated with \$10,000 capital by J. L. Murphy, M. W. Wohler and

A. F. Cushman, Fitzgerald, Stapleton & Mahon, 25 Broadway, are attorneys.

Mare Nostrum Corp., New York, has been incorporated to manufacture submarine devices, with \$50,000 capital by G. Caro, A. Scerbo and F. Gamba. Miele & Castellano, 299 Broadway, are attorneys.

Morton Towing & Transportation Co., New York, has been incorporated with 200 shares no par value by W. A. Kirk, and W. J. Maher. F. E. Single, 15 William street, is attorney.

Gulf Shipping & Supply Co. has been incorporated at Punta Gorda, Fla., by J. H. Oakley and W. H. Plummer.

Victor Towing Co., Parkersburg, W. Va., has been incorporated with \$50,000 capital by Earl Cooper, 321 Juliana street, and others.

Union Transit Co., 10124 Avenue M, South Chicago, Ill., has been incorporated with \$50,000 capital to own and operate steamships by C. W. Hallahan, John E. Owen and James D. Hallahan. Alvin L. Hansen, 9020 Commercial avenue, is correspondent.

Philip L. Benzel, Oconomowoc, Wis., has bought the property of the Sturgeon Bay Drydock Co., Sturgeon Bay, Wis., at foreclosure sale. It is planned to put the yard in operation after idleness of a year. It is equipped for wood and steel building and repair work.

J. G. Mulligan has been incorporated at New York, to carry on a navigation business, by J. G. and L. J. Mulligan and R. M. Mulligan. J. R. McMullen, 1 Broadway, is attorney.

Frederick P. Humphreys has been incorporated in New York to build and deal in yachts, with \$25,000 capital, by F. N. Bangs, B. N. Bass and J. P. Gregg. Shattuck, Bangs & Winant, 42 Broadway, are attorneys.